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IRON TRADE REVIEW

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CLEVELAND, O., MAY 31, 1928

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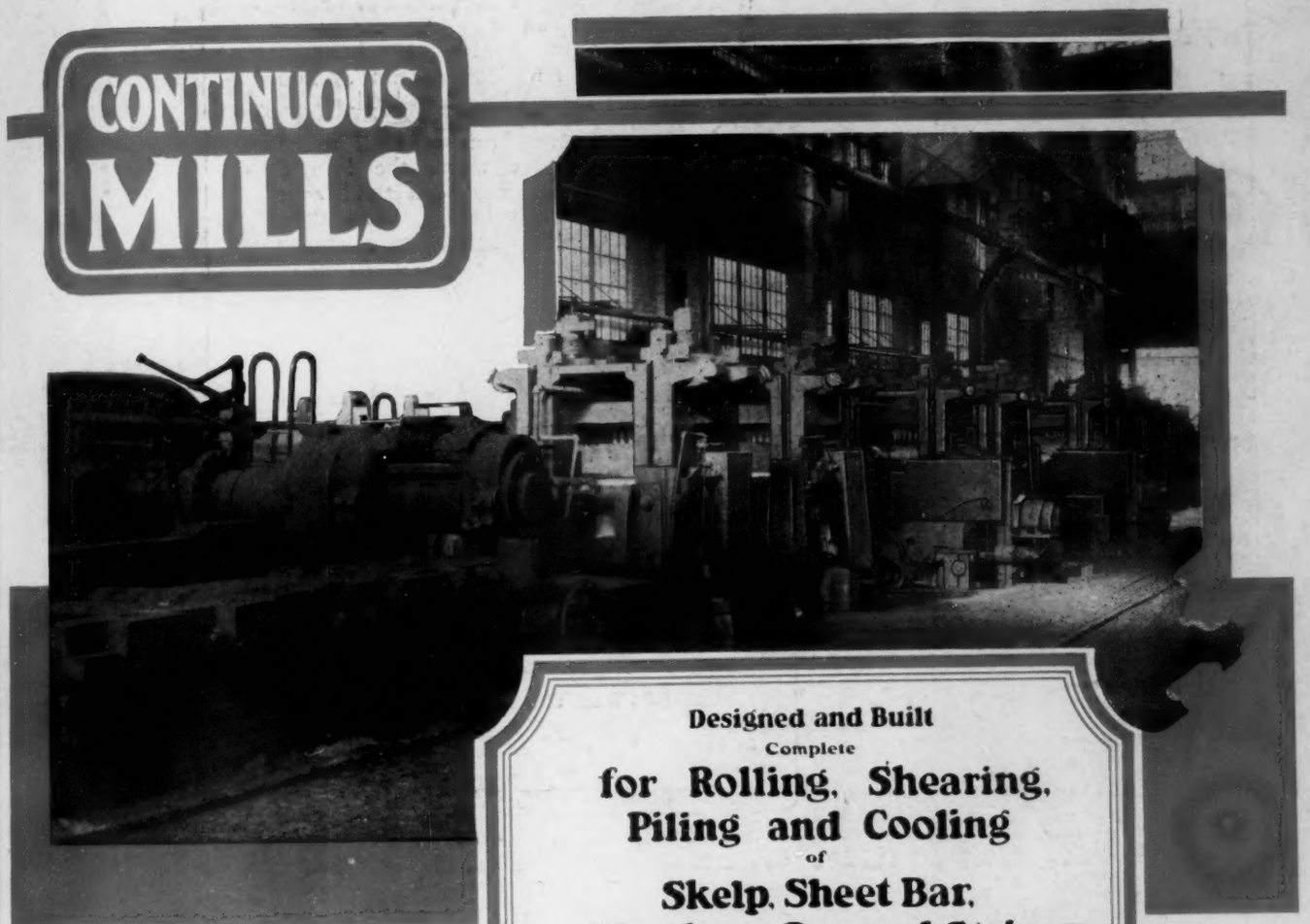

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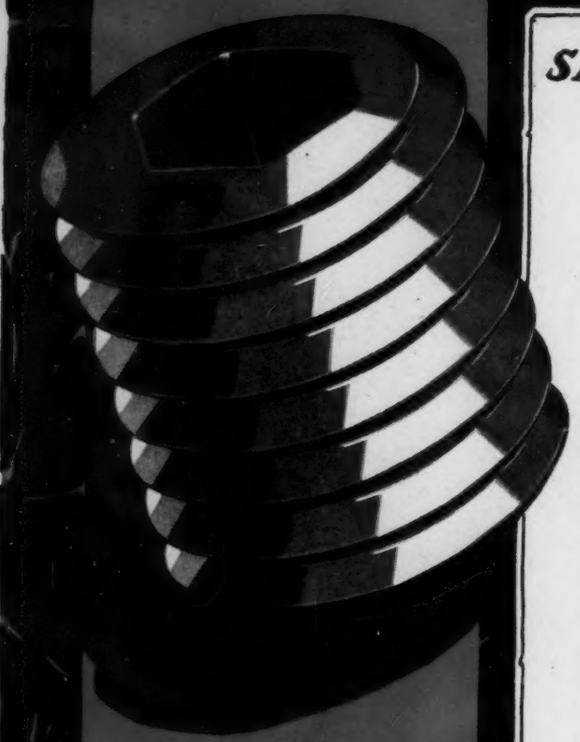

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Number 22

IRON TRADE REVIEW
Established 1883

Cleveland, O.
May 31, 1928

Enamel and Lacquer Coatings

BAKED IN VESTIBULE-TYPE OVENS

High-Temperature Installation Is Operated Automatically by Remote Control Equipment

By F. M. Reiter

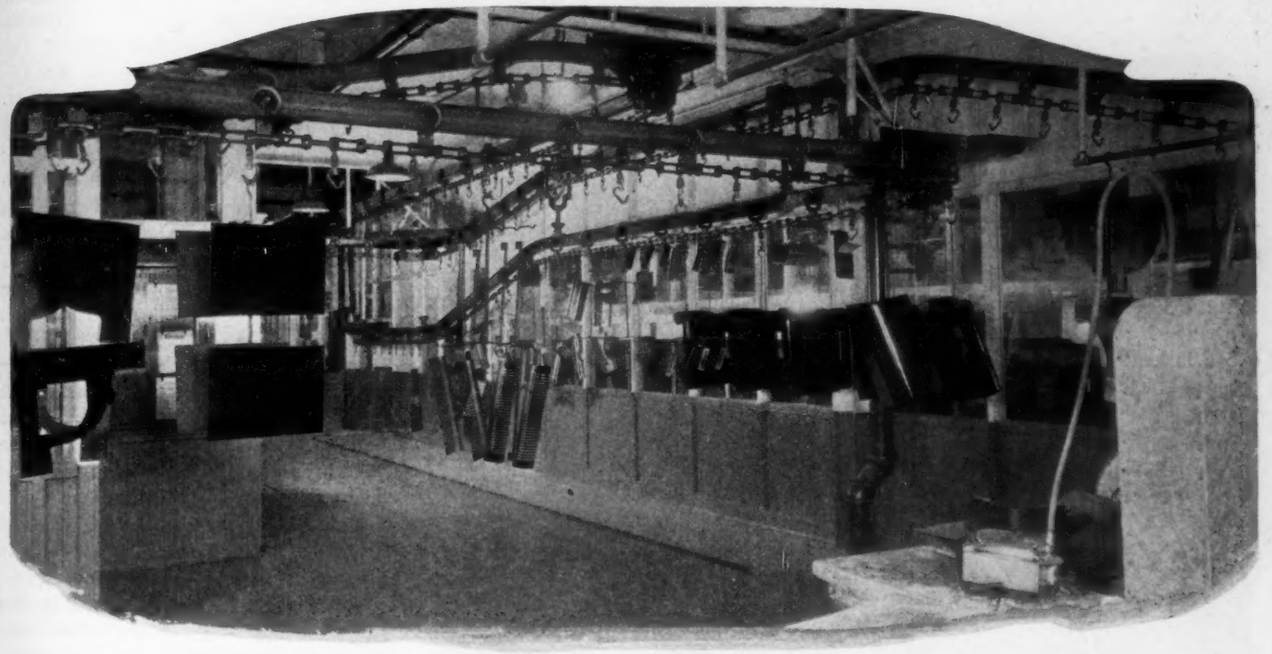


Fig. 8—Conveyor system for handling the work and low-temperature lacquer oven built with glass sides

IN INTRICACY of control and method of heating, the outstanding ovens of the baking group are the high-temperature bake ovens. This equipment consists of two side-by-side truck type ovens, each about 40 feet long, 4 feet wide, and 7 feet high. The ovens have a vestibule at each end, sized to hold on truck, so as to preheat the incoming material and to cool that leaving the oven chamber. These vestibules are separated from the main oven by motor-operated roller doors, similar to the roll top of a desk. These are the only truck type ovens in use in the department and do all the high-temperature baking. They average about 72 trucks a day of nine hours, at about 1000 pounds each, so that 50,000 pieces or 72,000 pounds of japanned ware is heated a day.

Opening the doors to permit the trucks to be pushed into the inlet preheating vestibule automatically closes the dampers on the hot air supply pipes in this compartment the truck automatically becomes engaged with a chain set upon the floor of the oven and is carried through the rest of the process. The entire movement is controlled by a central timing cam which successively energizes the rolling doors and the chain driving motors, starting and stopping them at precise intervals of

CONCLUDING installment of an article describing the practice of the National Cash Register Co., Dayton, O. for lacquering and enameling cabinets. The first installment, presented in the May 24 issue of IRON TRADE REVIEW, *included details of the burn-off method for making the surface suitable for the coating, the gas-fired furnaces and the conveyor system for routing the work through the various departments. The author, is associated with the Dayton Power & Light Co., Dayton, O.*

time. This timing is exact, as any overlap will result in a jam with considerable delay. All motions are protected from damage in case of the failure of one operation by means of interlocking devices.

The consecutive movements involved in the heating cycle are as follows:

1. A truck is pushed into the inlet vestibule, automatically engaging the chain drive.
2. Every nine minutes the remote timing control commences the cycle by lifting both roller doors. These doors wind up on a motor-driven roller located on the top of the ovens.
3. When these doors are up at the proper elevation, the chain travels forward exactly 45 inches, carrying all trucks along with it, bringing the truck from the inlet vestibule into the oven proper and discharging a completely baked truck into the effluent vestibule, forcing the truck that had been cooling therein into the open air to be removed by hand. An alarm bell warns the operator when a truck is discharged from the exit vestibule.
4. When this travel comes to an end, at the proper point, the roller doors are dropped and the cycle is completed. In nine minutes the cycle is repeated.

The control equipment automatically resets itself for the beginning of a new cycle. Each truck makes ten moves in the oven, so that the bake takes one and one-half hours.

Each of the two high-temperature ovens is heated by hot air blown from a gas-fired heater made up of eight sections. Each section is fired in a special arrangement of a tile burner, the products of combustion traveling upward through the five horizontal passes and leaving the heater stack at a temperature of about 200 degrees Fahr.

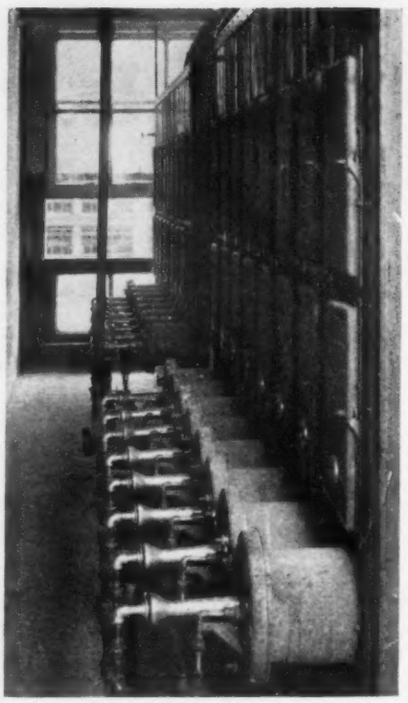


FIG. 10—GAS BURNERS ON HIGH-TEMPERATURE BAKE OVEN AIR HEATING SYSTEM

Due to the high heat value of the natual gas used, which is 1100 B.t.u. per cubic foot, and the short flame required, it was necessary to use the gas at a pressure of 3-pound gage. This pressure is obtained by means of a positive gas booster that increases the pressure from the main pressure of 4 ounces to 3 pounds. The gas consumption per burner averages about 100 cubic feet an hour, so that the total gas consumption for each oven an hour is 800 cubic feet. Tests run on similar heaters showed about 90 per cent efficiency. No air blast is necessary as the gas at this pressure with a fairly high stack, inspirates sufficient primary and secondary air for excellent combustion. The stack damper was set at about 75 per cent open and the size of orifice in the gas spud was drilled for 1/16-inch hole. Under these conditions, for normal operation of the burner, the flue gases analyzed 9.6 per cent carbon dioxide, 2.6 per cent oxygen, and 0.3 per cent carbon monoxide.

The air is taken from the conditioning equipment into the top of the heater through an individual blower at 70 degrees Fahr., and leaves at the bottom of the heater, for a 400 degree Fahr. bake at 500 degrees Fahr. and for a 250-degree Fahr. bake, at 300-degree Fahr.; the excess temperature taking care of duct losses, etc.

The heated air enters a duct at the bottom of each side of the oven about 25 feet long through a slit about 1 inch wide, and is exhausted from a duct in the top of the oven through six slots. The latter duct extends along the middle of the oven and over the front half. This draws the heat toward the cooler inlet end of the oven to recuperate as much of the heat as possible. Heated air also is conducted into the inlet vestibule for preheating the cold truck, but cold air blows through the outlet vestibule for cooling the effluent work.

The temperature maintained in the bake ovens, for high bake, varies from 400 to 450 degrees Fahr., depending upon the japan used. The heater outlet ranges correspondingly from 475 to 600 degrees Fahr. For the lower bake, the oven temperature varies from 250 to 275 degrees Fahr., with a heater outlet range of 300 to 350 degrees Fahr. The oven temperature automatically is controlled by a pyrometer located about the middle of the oven outside wall, by means of solenoid control valves that are set for maximum and minimum rates of burning. However, in case of air failure, etc., a motor valve, with manual starting requirement after shutdown, is used.

About ten air changes an hour are used in the ovens, the fans discharging the air into the heaters at about 3-inch water pressure. The temperatures maintained throughout the oven are uniform, as attested by data taken by thermocouples fastened to trucks

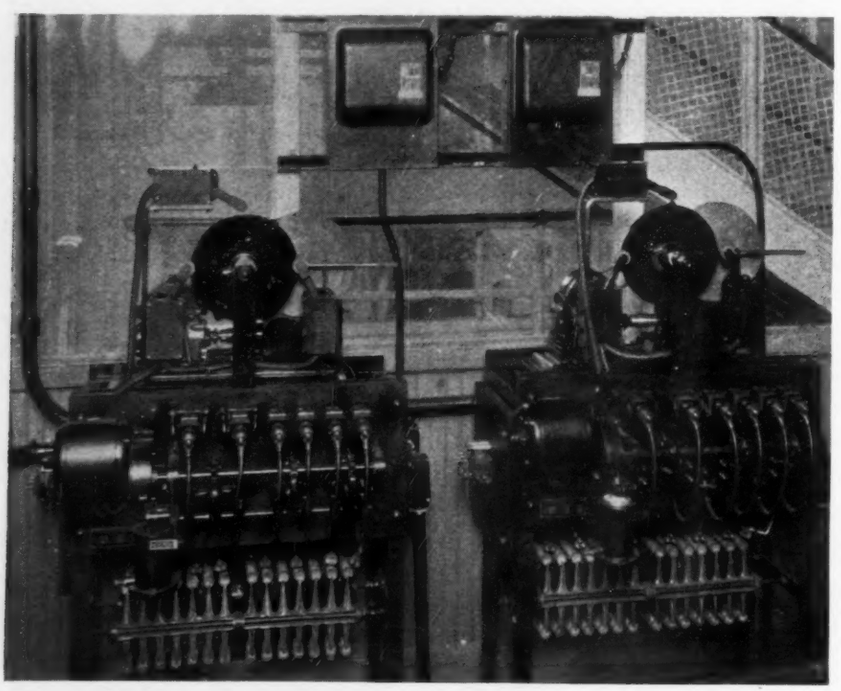
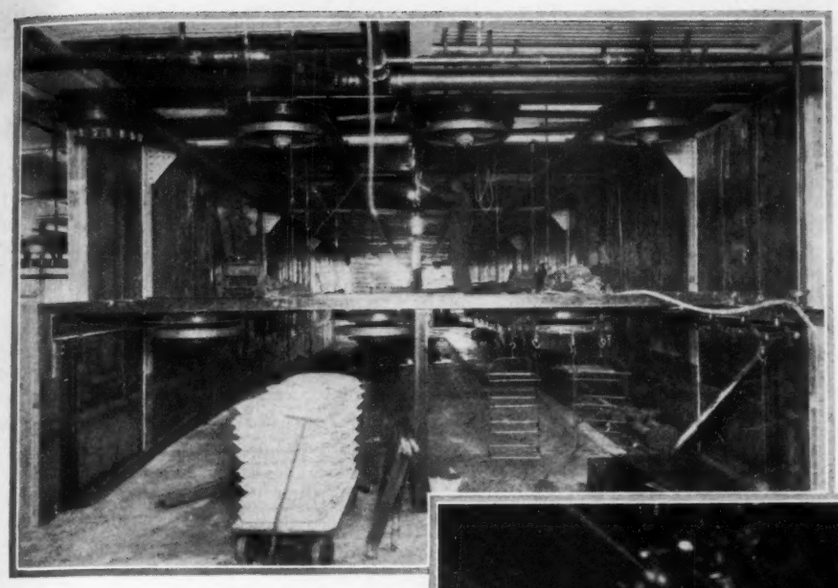


FIG. 9—REMOTE CONTROL EQUIPMENT ON HIGH-TEMPERATURE OVENS WHICH AUTOMATICALLY RESETS ITSELF FOR THE BEGINNING OF A NEW CYCLE



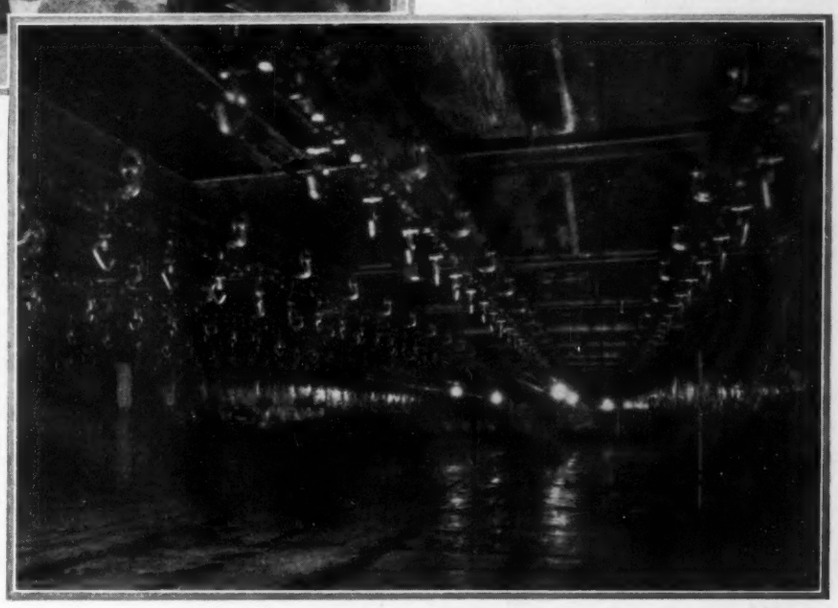


FIG. 11—AT THE TOP IS SHOWN THE INTERIOR OF THE LACQUER OVEN WHILE UNDER CONSTRUCTION. FIG. 12—INTERIOR OF THE LACQUER OVEN FOLLOWING A FEW DAYS OPERATION

at various heights and allowed to travel through the oven.

The accompanying table gives this data in detail, showing the temperature at the top, center and bottom of a truck going through the oven in the regular operating cycle; and the temperature recorded on the regular control pyrometer. It is of particular interest to note the remarkable closeness of all temperatures at position No. 3, where the permanent control thermocouple is located; and that all through the oven the maximum temperature variation of the truck from the top to bottom, with the exception of the first cold position, is within 10 degrees Fahr., and about half the time is within 5 degrees Fahr. These tests were taken shortly after the ovens were installed and the best operation not yet attained; the automatic control temperature conditions were not established.

These two gas-fired ovens replaced ovens that formerly were heated electrically. These were truck-type ovens with indirect heating elements in the ovens proper. Although protected from contact with the japan vapors, there often was danger of seepage of these vapors into the heating sections, with possible trouble. The new gas-fired equipment has the greatest factor of safety due to its remote heating of the circulating air used to bake the finishes.

Only the black japans are baked at the higher temperatures. Colored and soldered work requiring a somewhat higher bake go through the lower bake oven in which a temperature of 225 degrees Fahr. is maintained. The baking of the japan is an oxidation and polymerization process that is accelerated at higher temperatures. At excessive temperatures, however, the finish is brittle and does not adhere as tenaciously. Hence, the maintenance of the proper temperature is of vital importance.

The work produced by the enameling department must stand the most rigid inspections. The research department is continually on the lookout for improved methods, operating conditions, as well as better materials. The finishes and lacquers are purchased to conform to definite specifications of specific gravity, color, absence of settling, viscosity, etc. The finished work must be free from mottle and up to the standards of hardness, toughness, adherence and wear resistance. The finished cabinet must harmonize with the furniture and decorations of the most fastidious mercantile establishments.

Table I

Progressive Temperatures Taken in Bake Oven

Position	Time	X Recorder thermocouple, degrees Fahr.	Check thermocouple top of truck, degrees Fahr.	Check thermocouple center, degrees Fahr.	Check thermocouple bottom, degrees Fahr.
Entrance	7:35	445	340	320	300
	7:45	460	380	365	330
7 ft. in	7:50	460	410	405	400
	8:00	460	410	420	410
14 ft. in	8:05	460	465	465	460
	8:15	455	460	470	465
21 ft. in	8:20	450	460	465	465
	8:30	455	460	465	465
28 ft. in	8:35	455	460	465	460
	8:45	455	455	460	460
At exit	8:50	450	450	440	445
	8:55	445	440	435	440

Temperature of exhaust air taken at various times during the test was 560, 620, 530, 610 degrees Fahr. The temperatures given in the above table correspond to about every other motion of the chain on the regular run of the time control, which is 45 inches every 9 minutes, about 90 minutes for the complete bake. The recorder thermocouple, designated "X" in the third column, is permanently located near the center of the oven.

What Is the Best Policy in Setting Prices of Machine Tool Equipment?

By R. E. Flanders

A PRICE may be impossibly low; that is, so low the manufacturing company cannot maintain its solvency. A price may be impossibly high; so high that sales are prevented and insolvency ensues. The practical range is somewhere between the too high and too low.

Primarily the low limit is set by the cost of production and distribution. If the price is below the normal cost, and by normal cost is meant the cost averaged over a full period of good and bad times, the manufacturer will eat up his surplus and go out of business unless he has other more profitable lines. This is a simple and obvious fact, but it is not so simple to take practical account of it. Cost keeping is a most flexible operation. Different firms and even different accounting experts differ on the rules. The final arbiter is an honest trial balance. If the cost system says there are plenty of profits and the trial balance says the company is going down hill, there is probably something the matter with the cost system.

It is a common, even a usual, experience for a new machine to be introduced at an optimistically low price, based on faulty cost figures or estimates. Over a period of years this price is slowly raised to the point where real trial balance profits begin to appear. But meanwhile there have been perhaps several years of losses to make up. Expert estimates and true costs are essential to profit.

Competition Is Factor

Any one of several factors may set the top limit of price which may be successfully asked for a given product. The most obvious of these factors is competition. If other firms are selling machines at a lower cost which are of equal value in the eyes of the average customer, competition is the deciding factor. But this top limit may be raised for any individual product above the competing price if the customer can be shown that the more costly machine has a greater earning power. Value, therefore, is the second factor which sets the top limit.

At this point we often find ourselves out of sympathy with the purchaser. It seems to us that he makes unduly exaggerated demands in profit earning before he will consider the purchase of a new and expensive production machinery. It seems ridiculous to us that the customer should require a machine to pay for itself in six months, a year, two years, or even five. But if we can put ourselves in the customer's place we get a different viewpoint. With all the ups and downs of the automotive parts manufacturer, for instance, how can he consistently look forward to a five-year period before he has paid for his equipment? He would be foolish to do so in most cases; he might reasonably do so in others.

The situation is complicated by our own activities in bringing out new designs which render old ones obsolete. If competition is going to force our customer to purchase new machinery, as yet undesigned, in two or three years, he must realize quickly on that which he purchases now. We cannot guarantee not to render his purchase of today obsolete tomorrow.

In spite of the fact that we object as machine tool builders to these demands for a quick turnover on the purchase price of our product, as machine tool buyers we recognize the situation perfectly.

It is evident that while value to the user sets a top limit to the price that may be asked, it cannot in practice raise that limit quite so high as we might like to see it go. Patents may have an effect in raising the top limit of prices. They cannot raise it above the limit set by productive value, but they may raise it above that set by free competition, if they prevent other manufacturers from reaching the higher productive value. If patents give too high a margin of price difference, however, their tendency is to stimulate the ever ready American inventive genius.

Sheer selling ability may sustain a price above competing machinery of equal value. Old established reputation may do the same. More legitimately, a contemporary reputation for prompt, intelligent and continuous service and scrupulous fairness of dealing will have the same profitable result.

Considers Price Policy

Before we discuss where the price should be set between the high and low limits, let us consider whether it should ever be set outside of them; that is, whether a price should ever be set below normal cost. It is not true to say that it has never paid to sell below cost. History is against this view.

In the bad old days the Standard Oil Co., for short times and in restricted areas, would sell below cost to freeze out a smaller and less prosperous competitor. It would recoup

Suggests "Best Policy"

LET us suppose existing conditions offer a profit to the manufacturer. How much of that profit shall he take? Various suggestions have been made, among which are the following:

1. *The manufacturer should settle on a certain percentage as a fair profit to add to the cost of manufacture.*
2. *The sale price should be set so that the profit is a certain percentage of it.*
3. *The sale price should be set to provide certain ideal dividends and reserves in relation to the capital stock.*
4. *The ideal profit should bear a certain relation to net worth.*
5. *Or to the book value of the investment.*
6. *Or to the replacement value of the total assets.*
7. *Profits should bear a percentage relation to conversion cost.*
8. *Or, finally, the price may be "all that the traffic will bear."*

. . . The best policy, however, is to set the figure at the price that will bring the highest continuous returns. Continuous returns suppose satisfied customers.

Abstract of paper read at twenty-sixth spring convention, National Machine Tool Builders' association, Chicago, May 22. The author is manager, Jones & Lamson Machine Co., Springfield, Vt.

itself completely after a successful campaign of this sort by raising prices above the normal for a longer or shorter time. No one would seriously consider such a policy now. It is condemned as criminally unfair competition; nor would it be surely profitable in the long run in these days.

The classic example, however, of profitably selling below cost is Mr. Carnegie who during hard times cut his prices to a point below the profit line, but down to a figure which enabled him to hold his organization and maintain its productive efficiency. This was good for Mr. Carnegie, but it was not good for the steel industry as a whole. The present policy of the United States Steel Corp. is without any doubt better for all parties concerned. The fact remains, however, that Mr. Carnegie made a personal success of the other policy.

Duplication Would Be Difficult

It would be difficult to duplicate his personal success today. The capital resources of the country are so large, manufacturing ability is so much more widespread, and other factors have so evened up that it would be very difficult indeed for a single competitor in any line of work to attain the commanding position that Mr. Carnegie occupied.

A more serious objection relates to the nature of our business as one of the equipment industries. There is a considerable demand for steel even in dull times which can be stimulated by a price reduction. This is still more true of staples like goods and clothing. But when hard times come on, the greater part of the machine tool market is not dormant, it is *stone dead.* Reducing prices in hard times for us does not increase sales. It merely increases our losses. We may say definitely and without hesitation that selling goods in our line at any time below cost is useless.

Before leaving this question of cost let us make sure we leave nothing out. Cost includes, of course, labor, material, and manufacturing and selling overhead. In the overhead are included salaries of all necessary officials on a scale not exorbitant as compared with business in general; also depreciation sufficient to care for replacement of productive capacity of plant and equipment as it deteriorates by wear of obsolescence.

There must also appear in the cost a sufficient item to carry on the necessary development work, to maintain the company's competitive position. The selling price must also be high enough to provide legal interest, through good times and bad, on that part of the net worth of the company which is actively engaged in the business. This excludes, for instance, more or less permanently invested resources, which should carry themselves. All these are elements of cost, and must be met by the selling price if the firm is to preserve a continuing existence.

There has been a tendency to consider that the only answer to the problem is to raise prices. This is only half the answer. Coming into the business end, as the writer did, from the manufacturing and engineering entrance, the opportunities to improve the situation by reducing costs almost always appear attractive. There are few shops in which an intelligent campaign would not result in lowered manufacturing cost. Skillful redesign of the product, with an incidental standardization of certain parts and materials, also will help. Better production and stock control to release frozen capital will help. Good management in general must be a first factor, not a secondary one, in producing profits.

There are conceivable cases in which an actual lowering of the price will increase the profit by decreasing costs of manufacture. This has been true of automobiles. It could be true in our field only in the case of standard, general purpose machines. The high production machines have so much about them that is special, and their design is subjected to such frequent improvements that such a policy would be ineffective.

One of the severest cost handicaps is excessive plant capacity. We are not yet adjusted from war and prewar capacity to the status required by a developed country. The drastic step of liquidation for some part of the assets may be necessary. It will be interesting to see whether further liquidation of the industry as a whole is going to be necessary, or whether the growth of the country is about to catch up with our facilities.

Factors To Be Considered

There is still the resource of raising prices, and this is a perfectly legitimate remedy if it can be done. The assumption, however, was that the top limit, as determined by outside conditions, was too near the cost line to permit of a profit. To raise prices, therefore, something will have to be done besides sending out a new price list. If competition sets the top limit, our manufacturer must consider whether or not his competitors are prospering. If there seems to be real reason to believe that competitors are prospering, our manufacturer will have to go back and dig into his manufacturing and engineering problems again, or get out of the business.

If his competitors are not prospering, then the whole industry is on an unsatisfactory plane, as ours has been for eight years now. It is then legitimate and socially desirable for us to recognize the fact and to take such steps individually as will remedy the situation as a whole. If the distressed individual manufacturer cannot arouse the trade as a whole, he has still the recourse of so raising the value of his product, and rendering such service to his customer, that he can obtain profitable prices above the general level. Here again we get back to engineering as a prime factor in profit. The best policy is to set the figure at the price that will bring the highest continuous returns. Continuous returns suppose satisfied customers.

The highest profits are not to be obtained by setting arbitrary standards, but by applying to the business every available ounce of engineering, manufacturing, selling and financial ability, and applying them to render a maximum of service to the customer.

Institute of Metals To Meet in Liverpool

The British Institute of Metals has issued a preliminary program of the four-day annual meeting of the institute, which is to be held in Liverpool Sept. 4-7. In the course of the institute's 20-year existence, most provincial centers and many foreign cities have been visited, but this the first occasion on which Liverpool has received this body of metallurgists and engineers.

The proceedings will begin on Sept. 4 with a lecture on "Non-Ferrous Metals in the Shipping Industry" by F. G. Martin, B. Sc. The mornings of Sept. 5 and 6 will be devoted to the reading and discussion of papers and the afternoons to visiting works of interest in the neighborhood, the Gladstone dock, and a large liner. The meeting will conclude on Sept. 7 with an all-day motor trip to North Wales, during the course of which it is expected that an electric power station and aluminum works will be visited. G. Shaw Scott, 36, Victoria street, Westminster, London, S. W. 1, is secretary of the institute.

Western Society of Engineers, Chicago, has moved to the Engineering building, 205 West Wacker drive, Chicago.

THE furnace described in this article is the second of its type that has been designed and erected in the steel foundry department, United States Naval Gun factory, navy yard, Washington. The author is material engineer, metallurgical and testing division, Naval Gun factory.

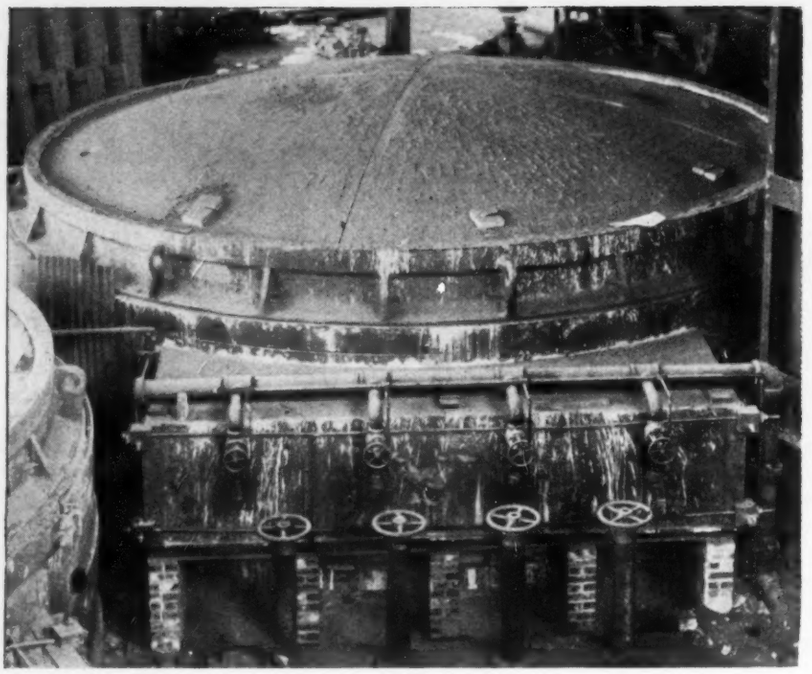


Fig. 1. — How the completed furnace appears from burner side. The hand wheels in foreground control draft dampers.

Circular Annealing Furnace Is Success

Designed Originally for Special Castings at Naval Gun Factory, Results Demonstrate Superior Features — Simplicity, Convenience and Economy Claimed for New Type

By Jerome Strauss

RESEARCH directed toward a predetermined objective yields oftentimes, as by-products of the investigation, principles, processes or other findings of much greater importance than that objective. Likewise, in industrial operations, ends sought and attained frequently are subordinated to the incidental accomplishments.

From this, as well as other angles, the furnace construction described in this article is of interest, for though designed originally for the sole purpose of processing a specific group of castings, results of a general character have been such as to establish a policy for all future construction of similar equipment.

The furnace described is the second one of its type and size and both are functioning beyond original expectations. The circular form of the first unit was dictated by the castings to be annealed (a group of hollow cylindrical castings of complex detail from 14 to 22 feet in diameter) while the building of the second was governed not so much by these same considerations as by limitations of floor space and the excellent results obtained in the operation of the first furnace. However, as will be pointed out later,

Fig. 2—Constructing the Floor of the Furnace. The Channels in the Floor Are Connected Sectionally to Four Main Flues. Fig. 3—The Main Flues from the Floor Channels Open into the Stack Flue

even in the absence of the restrictions, the performance records of the first unit would have resulted in the same decision.

Among other noteworthy features is the one-piece roof, 26 feet in diameter overall and weighing about 25 tons. The outlets for the products of combustion are arranged to permit close temperature control by distributing the heat at the will of the operator. The number of ducts in each quadrant is different at the front and at the back of the furnace and each quadrant is under individual damper control. Four oil burners are provided, although three will produce and maintain a temperature of 1600-1650 degrees Fahr., thus permitting burner replacement or repair without furnace shutdown or delay. Liberal use of insulating brick has resulted in both fuel saving and simplicity of temperature control.

The concrete slab supporting the furnace rests upon a group of long wooden piles, for the Potomac river is less than ¼-mile from the furnace and the foundry floor is only a few feet above mean high water. This condition made it impossible to set the furnace more deeply into the ground than is shown in Fig. 1. With a more favorable location, the entire furnace could have been built into the ground (up to the level of the bottom of the roof) with consequent more effective heat insulation throughout the furnace.

A cross-section of the structure, through the center of the furnace chamber, and through port, burner opening and damper control appears in Fig. 4.

With the exception of the furnace floor, which is built of 12-inch fire-brick slabs to secure the necessary strength across the flues, the furnace chamber lining consists of 9 inches of fireclay brick covered by 4½ inches of insulating brick. In addition, the cylindrical furnace wall further is increased in thickness by 4½ inches of common clay brick. This is supported in turn by several pieces of steel plate laid end to end and held in position by three steel hoops with ends clamped by steel bolts. In Fig. 4, 2½ inches of insulation is shown below the firebrick at the base of the flues. However, due to questioning the strength of this brick at working temperatures, this was replaced during construction, by common red brick.

The burners are supplied with fuel oil at 30 pounds per square inch pressure and primary air at 2 pounds per square inch pressure. As previously noted, the furnace is equipped with four burners, but the highest commonly used annealing temperatures can be maintained with three without the necessity of consuming their maximum capacity of 25 gallons per hour, each. The burner ports are shown in Fig. 5.

An excellent idea of the flue construction may be had from Fig. 2. Twenty-eight small flues or ducts lead from the inner circumference of the furnace chamber, at the floor level, to four main flues that in turn merge into a single passageway connecting with a 75-foot stack. One small duct is located at either end of a diameter drawn perpendicular to the direction of the four main flues. In the half circle embracing the burner openings ten additional ducts begin, while in the other half circle are sixteen others equally spaced. Each of the four main flues carries off the products of combustion entering the ducts in one-quarter of the furnace circumference. Then, as noted, all four combine to form one huge flue leading to the stack. Part of this construction is shown in Fig. 3. Just back of the point shown are the dampers, by which the passage of burned gas through each flue, and hence the heat applied in one zone of the furnace is controlled.

As may be surmised, the building of the one-piece roof presented a number of interesting problems. The retaining ring for the brick work shown in Fig. 1 is a single steel casting made without a complete pattern. The mold was built into the foundry floor and the inner surface swept in green sand, after the fashion of loam-mold practice; this green sand was then air dried. One section of pattern, representing one-eighth of the outer surface exclusive of the lifting lug, then sufficed for constructing the balance of the mold. The portions to form the lifting lugs were prepared last, using core sand in accordance with usual steel foundry methods. The section was desired as light as possible but stress considerations made reinforcing necessary; hence the heavy upper section which served as both strengthening member and shrinkhead. The casting made, it was carefully set around a mound of sand modeled to true form with a sweep, and with this inexpensive and simple equipment the layers of roof brick were set in position as may be seen in Fig. 6.

Improvements secured from this construction, the initiation and de-

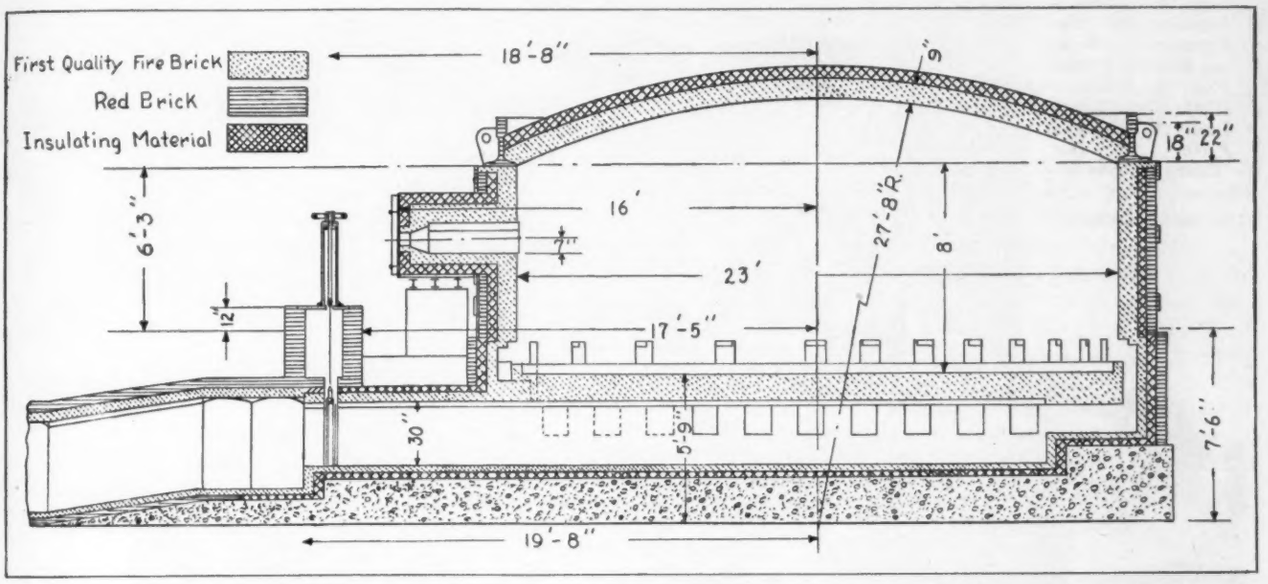


Fig. 4—Cross-sectional Elevation of the Furnace at the Center of the Chamber, Through Port, Burner Opening and Damper Control

sign of which rested practically entirely with the foundry supervisory staff, may be summarized briefly:

(a) Elimination of cold corners and cold floor, for the temperature of the latter lags but little behind the temperature of the furnace chamber.

(b) Economy of floor space.

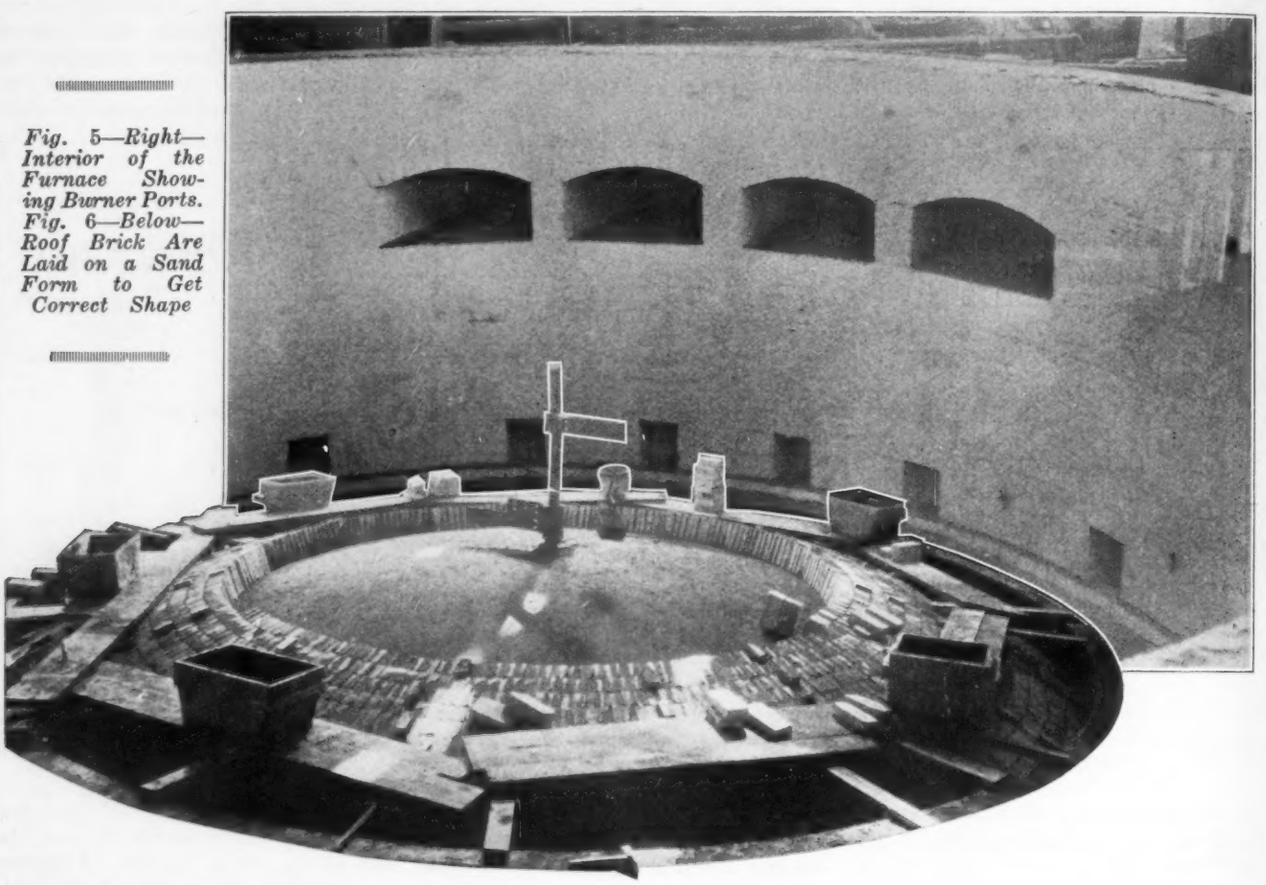
(c) Single lift for roof removal.

(d) Fuel saving due to insulation of walls, and under-floor flues.

(e) Uniform temperature rise and uniform cooling readily secured.

These results have been observed over a period of time on both furnaces to a degree somewhat beyond expectations. Temperature variation around the entire chamber, as recorded by 8 equally spaced thermocouples, is commonly less than 20 degrees Fahr.; the variation may, if required, be reduced to half this amount. During the period of rising temperature, differences of temperature are dependent, of course, upon the rate of heating.

Fig. 5—Right—Interior of the Furnace Showing Burner Ports. Fig. 6—Below—Roof Brick Are Laid on a Sand Form to Get Correct Shape



Revised Procedure Will Speed Standardizing

Extensive revision of its rules of procedure to speed industrial standardization work on a national basis, has been announced by the American Engineering Standards committee, 29 West Thirty-ninth street, New York. The chief object in broadening the procedure has been to make it so flexible that it may easily fit all of the varied conditions to be met in the wide range of industrial subjects covered by the committee's work. The revision is based upon the experience of the committee during its nine years of activity as a national standardizing body.

Three important changes are made in the procedure. Heretofore, each sectional committee—essentially a joint committee composed of representatives of the various groups interested in the particular work in hand—has acted under the administrative support and direction of one or more of the interested bodies, who are termed sponsors. A sectional committee may now operate autonomously, reporting directly to the A. E. S. C.; or it may act under sponsors as before.

The second change recognizes "proprietary" standards and makes possible the revision of such standards within a single organization on condition that it be shown that a standcerned. This method is particularly applicable to highly specialized fields in which the standard of an organizaard is acceptable to the groups contion has already achieved a position of recognized eminence. The third change provides for very simple cases. The approval of standards under such cases is based upon the action of a conference followed by written acceptances of the interested groups.

The governing authority of the American Engineering Standards committee is at present vested in 63 men representing 36 national organizations, industrial, technical and governmental. About 350 national organizations are officially co-operating in the work, with 2100 individuals engaged on various committees. Up to the present time, 111 national standards have been approved, and 164 additional projects representing almost all branches of industry are under way.

Offers Enameling Course

A complete course in porcelain enameling is to be given during the week of July 9 through July 23 in Cleveland by the Ferro Enameling Co. The course will be under the direction of J. E. Hansen, and will be studied from the technical and practical standpoint. Some of the subjects will include dry and wet process enameling, sand blasting, enamel shop management and diagnosing enamel shop troubles. Booklet and complete information may be obtained from the Ferro Enameling Co., Cleveland.

Stresses Need for Steel Profits

Schwab, in President's Address Before Iron and Steel Institute, Would End Cross-Hauls—Banquet Sets Attendance Record—British May Come in 1932—Members Ratify Directors' Actions

WITH steelmakers' profits admittedly inadequate, further reductions in the cost of production difficult, increased prices to consumers inexpedient and a decrease in wages undesirable, the obvious avenue for imperative relief of the steel industry lies in eliminating waste in distribution, declared Charles M. Schwab, president of the American Iron and Steel institute, in opening the spring meeting of the institute at New York, May 25. Cross-hauling of steel products is one of the primary evils to be attacked, and to this end Mr. Schwab recommended to directors of the institute that they set up a committee of expert steel men.

Connoting the importance placed by him upon the subject, Mr. Schwab departed from his custom of speaking extemporaneously and read his message, which included the observation that seasonal conditions are more favorable now than a year ago, the moderation of the presidential year is less manifest than before, anticipation of a volume of business exceeding that of 1927 still is justified, and only price is a really disturbing matter.

Democratization of the business session of the institute gathering was continued by Mr. Schwab in that action taken by directors at their recent meeting was laid before the members themselves. Directors of the institute sat with the president on the platform and three were called upon for remarks.

Gary Medal to Commemorate Late President

THE late Judge E. H. Gary, first president of the institute, will be commemorated by a medal, to have the significance in this country that the Bessemer medal of the Iron and Steel institute of Great Britain has in that country, instead of by a memorial tablet. On motion of T. W. Robinson, vice president, Illinois Steel Co., Chicago, the plan to establish a Gary medal was approved by the membership and a committee is to be appointed to draw up the medal and define the conditions of its award. The meeting also unanimously approved the suggestion of directors that a bronze medal be the reward of the author of the best paper delivered before the institute each year.

Mr. Schwab reported that when he went to England recently to receive the Bessemer medal he invited the British institute to meet in the United States in 1932. Once formal acceptance is received, plans will be laid for a large meeting and entertainment of guests.

Action of the board in increasing the number of directors of the institute from 24 to 30, in order to provide for more adequate representation of various steel companies, was approved.

Can Learn from British

In speaking informally, Mr. Schwab said that he was impressed with several features of the meeting of the British institute of Great Britain, which he recently attended. One was that the various sessions were started on scheduled time, and he announced his determination to follow a similar course with the American institute. Another feature which he copied from the British institute was the presentation of the institute's business affairs to its members. Still another feature for which Mr. Schwab expressed admiration and hope for introduction here was the custom of distributing the technical papers in printed form in advance of the meeting and restricting the author to 10 minutes for the reading of a digest. This leaves time for a much greater amount of discussion and Mr. Schwab found that these discussions added greatly to the value of the proceedings.

Canada Our Best Customer

Col. Thomas Cantley, chairman, Nova Scotia Steel & Coal Co. Ltd., New Glasgow, N. S., who was called on by Mr. Schwab for brief remarks, said it is probable that more than $300,000,000 worth of steel would be imported into Canada this year, of which more than 90 per cent would be furnished by the United States. Canadian steel makers, said Colonel Cantley, are suffering from what he regarded as an unwise tariff policy in Canada.

George M. Verity, president, American Rolling Mill Co., Middletown, O., also called on by Mr. Schwab, said that the great problem in the steel industry today is that of distribution and he believed that individual steelmakers must show increasing appreciation of the fact that the good of the industry as a whole is more important than the interest of any individual company. E. J. Buffington, president, Illinois Steel Co., Chicago, also submitted impromptu remarks, expressing his appreciation of the possibilities for constructive work that are open to the institute.

Other directors who sat on the rostrum with Mr. Schwab were William H. Donner, A. C. Dinkey, W. J. Filbert, E. G. Grace, J. A. Campbell, T. M. Girdler, H. S. Wilkinson. E. A. S. Clarke, Jesse F. Welborn, Ross H. McMaster and Howard M. Hanna.

Attendance of about 2000 at the opening session did not fall far short of the previous high mark. The banquet, however, did register a record when 1634 sat down. Principal speakers were Brig. Gen. H. M. Lord, director of the budget bureau, Washington, and Sir William Ellis, past president of the British Iron and Steel institute and Institution of Civil Engineers. Mr. Schwab presided.

A cable from James A. Farrell, president of the United States Steel Corp. and vice president of the institute, from Ireland, where he is on vacation, expressed best wishes for a successful meeting.

An impressive list of written discussions added to the papers submitted at the technical sessions of the Institute meeting.

Discussions of Great Value

The paper by Dr. G. B. Waterhouse on "Basic Open-Hearth Steel Practice" was discussed by Carl W. Peirce, open-hearth superintendent, Empire Steel Corp., Mansfield, O., and by H. B. Hubbard, open-hearth superintendent, Inland Steel Co., Indiana Harbor, Ind.

Discussions on the paper on the

(*Concluded on Page* 1411)

Increase Steel Profits by Eliminating Waste in Distribution

"Cross-Hauling" of Products One of Industry's Fundamental Mistakes—Returns on Investment Are Inadequate—Modification of Uneconomic Laws Suggested

By Charles M. Schwab

NO ONE can view the steel industry today without reaching the conclusion that this fundamental American business is apparently content with a profit on its investment amounting to little more than the interest one can earn from a savings bank deposit. Here is a business which provides the essential elements of practically all industrial, manufacturing and transportation effort. It pays its workers higher wages than are paid in almost any other line of manufacture. In manufacturing efficiency it is second to no other industry in the world. Capital investment in the steel business is greater today than it ever was. Our output reaches record volume. We are wonderfully well equipped and organized to perform the enormous service which the development of a growing country demands of this basic industry.

I do not think, however, that this country intends to demand the service we are rendering for the small return which the steel industry is currently receiving. I do not mean to imply that the steel industry expects large returns. Industry generally has been adapting itself very well to narrower margins than heretofore. But we have a right to expect, and it is in the public interest, that we earn enough to provide for the expansion, modernization, and development of our plants which the country's ever growing needs constantly require.

The economic ills of the steel industry are well known and have been much discussed so that I need refer only briefly to the outstanding facts. The total investment in the steel industry of this country is approximately $5,000,000,000 of which approximately $1,500,000,000 has been added during the last 14 years. The rate of return upon this investment of $5,000,000,000 has been approximately 5 per cent, and virtually no return at all has been earned upon the additional $1,500,000,000 last invested, the total earnings in the industry today being only slightly more than they were 15 years ago, before the additional investment in plant had been made. The rate of return upon investment in our industry is almost, if not quite, the lowest return earned in any of the principal manufacturing industries.

The low margin of profit in our industry is not conducive to sustained national prosperity, for if this country is to attain its maximum degree of prosperity there must be at least normal prosperity in every important branch of activity that enters into the economic life of the nation. Low profits, besides depriving security holders of a fair return upon their investment, also tend to imperil the general wage scale of the country, affording as they do a constant temptation to the management of industries to reduce wages, as the only solution of their economic difficulties.

Everyone agrees that the prosperity of our country is intimately connected with the liberal wage scale now prevailing and no serious minded man would argue that a reduction of wages in this country is a desirable thing. Assuming the general acceptance of my plea that the rate of return in the steel industry is inadequate, let us consider for a moment what remedies can be suggested. The two most obvious remedies are, of course, reductions in cost or an increase in prices. To the first suggestion I would say that the steel industry has already gone very far in reductions in cost, the experience of my own company showing a total reduction of $7.27 per ton in the average cost of production between 1923 and 1927. While there are still opportunities for further reductions of cost we know that we cannot take off much more from cost of production, certainly not without the expenditure of large amounts of capital, and that money can be provided only from earnings or from borrowings which are made from the public and which can, in turn, be justified only by earnings.

An increase of prices in the industry would be helpful to the industry and fair from the point of view of its customers. But there is another possibility of increasing earnings without either reducing costs further and without increasing prices further which I want to suggest to you for your consideration, and that

From address of president, American Iron and Steel institute, New York, May 25, 1928.

Nation Prosperous; 1928 To Be Good Year

AMERICA is enjoying an amazing period of prosperity. The past winter has been one of the most prosperous periods we have ever known, and though this is a presidential year the moderation in business which a presidential year usually brings about has been less manifest this year than has been the case in other years when political uncertainties hovered over the horizon. The seasonal conditions are favorable, more so than at this time last year and there is every justification for our anticipating that the business of the calendar year will, in volume, be in excess of the business of last year.

Our great country stands upon a pinnacle which it has never reached before. The attainment of such a height of wealth and prosperity brings with it vast responsibilities. In the meeting of those responsibilities, and in the protection of our country's interests, from every point of view, and in the promotion of our country's welfare in every direction, I am sure that I can say without hesitation that no group of our citizens will strive more earnestly and effectively to do their part than the members of the great industry in which we participate.—CHARLES M. SCHWAB.

is the elimination of waste in our industry due to its methods of distribution. One of the principal instances of such waste is the cross hauling of steel products.

It is manifestly uneconomic for a steel manufacturer in Chicago to ship 100,000 tons of steel to Pittsburgh at a time when a Pittsburgh manufacturer is shipping a like quantity of like material from Pittsburgh to Chicago. The sales in each case must be made at prices prevailing in the districts where the steel is sold and consequently the sales price nets less to the manufacturer in each case than they would have netted if the Chicago manufacturer had supplied the Chicago market and the Pittsburgh manufacturer the Pittsburgh market.

The example that I have used of cross hauling between Pittsburgh and Chicago is an extreme case which, in actual practice, probably seldom occurs, but is illustrative of cross hauling which does occur in very large quantities from various districts. This is a problem in which the buyer of steel, as well as the producer, is or should be vitally interested. It must not be assumed that all of the cost of this cross hauling is borne by the producer. It is obvious to everyone that there is an economic waste in permitting the cross hauling to exist and it should be obvious that this waste is paid for jointly, although perhaps indirectly, by the consumer as well as the producer of steel products.

The hunger for tonnage and desire to operate at capacity which is now and has always been one of the fundamental mistakes of our steel industry, has probably been the chief cause of the cross hauling of steel products that exists today. Yet all steel manufacturers know that at the end of the year they have not changed their relative rates of operation as compared with those of their competitors to any appreciable extent so that the net result of the cross hauling of materials has not been to increase the output of the individual producers by any appreciable amount. It has merely served to dissipate a part of their profits in unnecessary transportation.

Many of us have for a long time been thinking along these lines and yet have felt powerless to remedy the situation. The steel industry is a law-abiding industry and the members of it are law-abiding citizens. But surely where laws force uneconomic conditions into existence one may well consider whether the laws should not be changed. It is obvious in the public interest that every industry should be conducted upon the most economical basis possible. It is equally important that the public interest should at all times be protected against agreements affecting prices or trade conditions which might themselves become a burden upon the public. But surely between these two horns of the dilemma there must be a middle ground which would be in the interest alike to the manufacturer and the consumer, and of national prosperity as a whole.

It is my purpose, therefore, to recommend to the directors of the American Iron and Steel institute that this great institution shall constitute a committee of expert steel men to study this problem with a view frankly to recommend to the public and to the proper public authorities, a constructive plan which may result in such modification of existing law as will enable the factors in the steel industry, and indeed possibly in other industries, to achieve those economics which are so important, and at the same time suggest such plan of government knowledge and possibly supervision of such measures as may be proposed to be taken, as will adequately and thoroughly protect the public interest.

Business in these days must be done in the full light of day. None of us has any thought of entering into agreements or arrangements along these lines which shall be other than in the broadest public interest. We are perfectly willing, therefore, that competent government authority should be thoroughly advised as to all that we propose to do along such lines. We should be equally confident that competent public authority, acting under the influence of an enlightened public opinion, would sanction all such measures as were so obviously in the general interest. Here is a problem of practical business statesmanship to which I feel the American Iron and Steel institute may wisely and constructively address itself, and I am confident that the ability in this industry is capable of developing measures which will commend themselves to the American people.

Stresses Steel's Need for Greater Profits

(*Concluded from Page* 1409)

"Effect of Coal Segregation, Mixing and Heating Upon the Quality of Metallurgical Coke," by F. F. Marquard, were submitted by B. M. Stubblefield, superintendent of coke plants, Youngstown Sheet & Tube Co., Youngstown, O., and by B. W. Winship, superintendent of coke plant, Bethlehem Steel Co., Steelton, Pa.

W. J. Priestley, vice president, Electro Metallurgical Sales Corp., New York, discussed the paper on "The Manufacture of Alloy Steels" by E. C. Smith.

W. N. Flanagan, engineer, Carnegie Steel Co., Pittsburgh, discussed the paper on "Waste Heat Boilers" by R. H. Stevens.

The paper by R. H. Watson on "The Trend in Ingot Mold Design" was discussed by R. S. Poister, metallurgical engineer, Electro Metallurgical Sales Corp., Pittsburgh, and by L. F. Reinartz, assistant general superintendent, American Rolling Mill Co., Middletown, O.

The paper by Wilfred Sykes, on "A Modern Steel Works Power and Blowing Plant" was discussed by P. Hoffman, Ingersoll-Rand Co., New York, and by O. Needham, Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa.

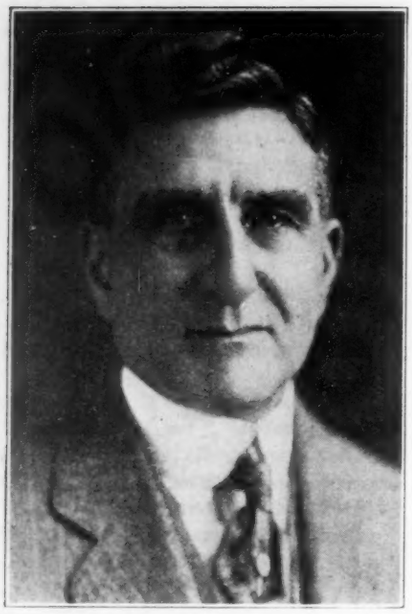
Institute Lecture Treats Crystal Properties

The May lecture of the British Institute of Metals was delivered in London on May 8 by Prof. Cecil H. Desch, University of Sheffield, Sheffield, who chose for his subject "The Chemical Properties of Crystals." After referring to the light thrown on the mechanical and physical properties of crystals by modern ideas as to the atomic structure of matter and the internal structure of the atom, Professor Desch discussed the various ways in which atoms may be held together in a crystal.

When a metal is attacked by an acid, the surface is not dissolved uniformly, but distinct "etch-figures" are produced, and the shape of these must be intimately related to the internal structure of the metal crystals. The figures may vary in the most curious way when the solvent is changed, and that is shown most clearly by large crystals of copper. The chemical properties of crystals are most easily illustrated by substances which do not consist of closely packed atoms, but have an open structure, such as graphite. Looseness of structure also is important for diffusion in solids, on which many technical processes depend.

Three boilers recently were installed in New York which will produce 350,000 pounds of steam an hour each.

Institute Speakers Have Varied Subjects

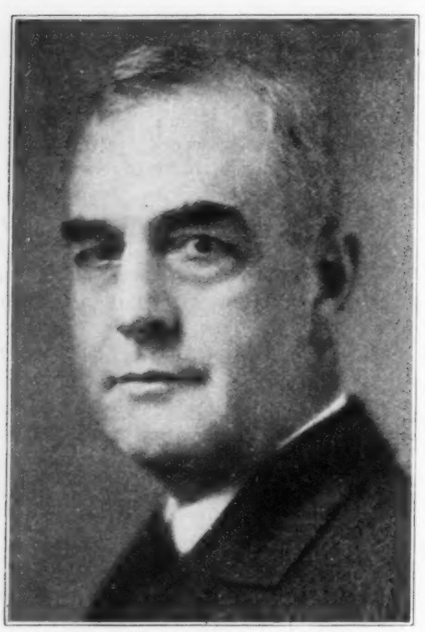


F. F. MARQUARD

FRANK F. MARQUARD, assistant general superintendent of the Clairton Steelworks and furnaces of Carnegie Steel Co. at Clairton, Pa., was born in Cleveland in October, 1875. He is a graduate of Ohio State university, Columbus, O., with a degree in civil engineering obtained in 1896. Attending Case School of Applied Science in Cleveland, he was graduated in 1898 with a degree in mining engineering and chemistry. He entered the steel industry, going with the American Steel Casting Co., Sharon, Pa., in February, 1898. In May of that same year he went with the National Steel Co. at Sharon, later a part of Carnegie, where he was employed as a chemist. From 1903 to 1916 he was superintendent of the Farrel by-products coke plant, at Farrell, Pa. He was made superintendent at the by-products coke works at Clairton, Pa., in 1916, and in 1926 he was appointed to the position he now holds. Mr. Marquard is a member of the Eastern States Blast Furnace and Coke Oven association in addition to his membership in the American Iron and Steel institute. He is a member also of the Rotary club at Clairton, and the Youghiogheny Country club. His paper dealt with the preparation and use of coke.

E. C. SMITH

EARL C. SMITH, assistant general superintendent of Central Alloy Steel Corp., Massillon, O., presented the paper "The Manufacture of Alloy Steels." Mr. Smith was born at New Brighton, Pa., and attended Ohio State university, Columbus, O., receiving a degree in 1913. He spent the following year in post-graduate work there and then became connected with the Illinois Steel Co. at Gary, Ind. A year later he entered Columbia university, New York, and following his course there he became an instructor at Ohio State university. During the war he was connected with aircraft production office in Pittsburgh, and in 1919 he went with the Central Steel Co., Massillon, as chief engineer. He held the positions, successively, of mill metallurgist and chief metallurgist. Besides his membership in the American Iron and Steel institute, Mr. Smith is a member of the American Institute of Mining and Metallurgical Engineers, American Society for Testing Materials, American Society for Steel Treating, Iron and Steel institute, and British Institute of Metals, both of England, and other organizations. He has been a speaker on numerous occasions before technical groups.



RALPH H. WATSON

RALPH H. WATSON, who presented the paper "The Trend in Ingot Mould Design," was born in Harvey, N. B., in January, 1878. He attended public schools and then moved to Massachusetts where his education was continued. He was graduated from the Lawrence scientific school at Harvard university, Cambridge, Mass. Mr. Watson's first connection with the Carnegie Steel Co., Pittsburgh, was made in March, 1902, when he became a metallurgist's assistant. Prior to that time he had been associated with the bessemer department of the Pennsylvania Steel Co. of New Jersey, at Sparrows Point, Md. Mr. Watson became metallurgist for the Carnegie company, then second assistant general superintendent, superintendent of open-hearth furnaces and then assistant general superintendent. When the recent changes were made in the Carnegie company, Mr. Watson was advanced to general superintendent of the Homestead works, succeeding John S. Oursler, who was made vice president. He is a member of the Oakmont, University and Fox Chapel clubs of Pittsburgh, and the Harvard club of New York.

Seven Authors Present Research Data

WILFRED SYKES

WILFRED SYKES, author of the paper "A Modern Steel Works Power and Blowing Plant," presented at the institute meeting, has had steelworks experience both in this country and abroad. He was born in New Zealand, and was educated at Melbourne university, Melbourne, Australia, in electrical and mechanical engineering. Before coming to the United States he had been with the Allgemeine Elektricitats Gesellschaft in Berlin, Germany, and at Melbourne. He was associated with Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., as an engineer from 1909 to 1920, being in charge of steel mill and other engineering work. Mr. Sykes went with the Steel & Tube Co. of America in 1920, and in 1922 he joined Inland Steel Co. where he is assistant general manager.

G. B. WATERHOUSE

G. B. WATERHOUSE, professor of metallurgy at the Massachusetts Institute of Technology, Cambridge, Mass., is an Englishman by birth. Professor Waterhouse was educated at Sheffield, where he received a degree in metallurgy. He came to the United States in 1900, studying later at Columbia university, New York, obtaining the degree of doctor of philosophy in 1906. He is the author of numerous scientific papers and translator of a great number of French and German works on metallurgy. He has contributed papers before to the American Iron and Steel institute. For about 18 years, Professor Waterhouse was technical director of the Lackawanna Steel Co. in Buffalo. He presented the paper before the institute titled "Basic Open-Hearth Steel Practice."

R. H. STEVENS

R. H. STEVENS, chief engineer of the Cambria plant of the Bethlehem Steel Co., Johnstown, Pa., entered the steel industry as an apprentice in the machine shop of the Edgar Thomson plant of Carnegie Steel Co. in 1888. In 1891 he went into the drawing room of the Homestead works of the Carnegie company. He became assistant mechanical engineer in 1898, and in 1902 was named chief engineer, a position he held until he became chief engineer of the Midvale Steel & Ordnance Co. in 1915. Mr. Stevens remained in that position, with the exception of a year spent as works superintendent at Coatesville, until 1923, when Bethlehem Steel Co. took over the Cambria plant. He was then appointed to his present position.

HOWARD CORNING

HOWARD CORNING, associated with the staff of the Harvard graduate school of business administration, Boston, presented the paper titled "The First Iron Works in America—1645." Mr. Corning went to Boston from Albany, N. Y., and for a number of years was engaged in the public utility business. Two years ago he became connected with the Harvard graduate school staff, where he is assigned to working on early business records. The paper which he presented at the institute meeting is an example of the unusual interest and value of the many documents which have been deposited with the Business Historical Society Inc., which stores its collections at the George F. Baker Library of the graduate school.

Pouring bay serving the seven 100-ton tilting furnaces at the plant of the Ford Motor Co., Fordson, Mich.

How Supremacy of Basic Open-Hearth Process Can Be Maintained

By George B. Waterhouse

THE basic open-hearth process has now developed to be the most important steel-making process, not alone here but in most countries. The percentage of basic open-hearth to the total steel produced in United States has steadily risen from 25 per cent in 1900 to more than 82 per cent in 1926 and 1927. It has been more than 80 per cent for the last four years, so that more than four-fifths of all the steel we make is produced by this process.

One of the reasons for the supremacy of the basic open-hearth process, particularly in the United States, is the ability to deal with raw materials that vary greatly in chemical composition, particularly as to the amount of phosphorus contained. Another reason for the growth of the basic open-hearth is the well-known ability of this process to successfully deal with the large amounts of scrap that have to be reworked into good steel.

A brief mention should also be made of the size of the furnaces. This can vary over wide limits. Furnaces of small capacity are operating successfully, even down to ½-ton size. There is a so-called 1-ton furnace running with splendid results in a plant near New York. From this small size, stationary furnaces range in all capacities up to the big Weirton furnaces generally called 250-ton capacity, but often tapping two heats together weighing 300 tons.

Attention should also be drawn to the great variety and kind of steels successfully made by the basic open-hearth process. In regard to carbon percentage, open-hearth steels cover a very wide range. On the low side we have material with practically no carbon, often called ingot iron, then the large tonnage of rivet steels and sheet steels very often with less than 0.10 per cent, the next great class is probably structural steel with carbon varying from about 0.15 to 0.30 per cent. Many forging steels have from 0.35 to 0.45 per cent carbon. Rail steel, of which about 3,000,000 tons is made each year, varies from about 0.60 to 0.90 per cent, and spring steels and steels for special purposes are made with carbon reaching as high as 1.4 per cent in some cases.

Various Fuels Used

In common with the acid open-hearth process a great variety of fuels can be used. Producer gas is still the main fuel for the basic process, natural gas is still a favored fuel when it can be obtained, and coke oven gas is being used in increasing amounts. In Germany mixtures of blast furnace gas with coke oven gas are being successfully used. Liquid fuels such as fuel oil and tar are used a great deal. Powdered coal has been experimented with considerably but is not being used as a standard fuel. The producer gas is being made from a large number of solid fuels. One plant in Sweden reported it was operating successfully on sawdust and wood waste burned in producers. All kinds of coal have been used, lignites, the various qualities and kinds of bituminous coal, and anthracite. The process is not dependent on one kind of fuel.

It may finally be pointed out that the process can be successfully combined with other methods of steel making. Under certain economic conditions, and with a plentiful supply of liquid pig iron, the combination of the acid bessemer process with the basic open-hearth is to be recommended. This is usually spoken of as the duplex process, the steel being marketed as basic open-hearth steel.

One of the main methods now being used to maintain this supremacy of the basic open-hearth process is to keep conversion costs low and make every effort to reduce them.

The refractory question is vital to the basic open-hearth industry and one phase of it has somewhat escaped general attention, namely, the widespread and increasing use of "prepared dolomite" for refractory purposes, particularly hearth repairs. Dead burned magnesite, imported from abroad, is still the standard material for putting in new bottoms. Each year sees an increasing amount of "prepared dolomite" being used at the expense largely of imported magnesite and of single-burned dolomite.

From a paper presented before the American Iron and Steel institute, New York, May 25. The author, George B. Waterhouse, is professor of metallurgy, Massachusetts Institute of Technology, Cambridge, Mass.

The question of the amount of fuel consumed in the basic open-hearth process is constantly receiving a great deal of attention. A battery of coke ovens is being built that will be heated with blast-furnace gas so that all the coke-oven gas will be set free for other uses. No regenerators are needed nor should be used for the fuel, and the port design will approach that used for another high value gaseous fuel, natural gas.

Another method to maintain supremacy is to pay the most careful attention to furnace design. The present tendency is to go to larger furnaces, particularly in the case of stationary furnaces, and experience has shown that quality has not suffered by growth in size of the heats. It would seem that, in regard to furnace design, the tilting or rolling furnace has not been sufficiently considered. This type of furnace offers many advantages. For certain modifications of the basic open-hearth process such as the duplex process or the Talbot process, it is practically indispensable. It is also well suited for the ordinary process.

As against the use of the tilting furnace compared with the stationary the cost of the furnace will be higher. It is believed the tilting furnace offers advantages that offset the increased cost. The finished material can be tapped into two or more ladles, thus obviating very large and expensive ladles and ladle cranes. Another very great advantage is the ability to remove all or part of the slag while melting, and be in position to make a new slag. In this way the furnace reactions can be carried on more rapidly, time can be saved, better steel made, the slag volume kept down and the fuel consumption kept low.

The sloping back wall, which is proving to be an outstanding improvement when applied to stationary furnaces is, and has been, an inherent part of tilting furnace design. With such furnaces there is little if any delay due to tap holes and other delays between heats are very small. There is usually remarkable freedom from bottom troubles.

One of the main ways in which the supremacy of the basic open-hearth process will be maintained will be by further study of the reactions that take place in steelmaking, the reaction between slag, and the inter-reactions between slag and metal. All of these are profoundly affected by temperature and by the concentration of the various reagents in both slag and metal.

The importance of the slags in the steelmaking processes is not yet fully recognized by steelmakers. A fairly accurate method for determining slag volume would be of great value. All open-hearth men realize the need of keeping this as low as possible in order to speed up the transfer of heat from flame to metal, save fuel and increase production.

Another of the main methods by which the supremacy of the basic open-hearth process can be maintained is by the production of still better steel than at the present, that is steel of improved quality. This calls for constant attention to metallurgical practice and increased care at every step of the process. For most of the steels made, it demands the greatest possible freedom from the nonmetallic impurities.

Many experiments are still being made in methods of pouring. One of them is at the Ford Motor Co., Fordson, Mich., where alloy steels are mostly made. The pouring practice, which was described in the Dec. 29, 1027 issue of IRON TRADE REVIEW, is a modification of the basket pouring used in many of our plants during the war.

Institute of Steel Construction Organizes Ten District Offices

AMERICAN Institute of Steel Construction has organized a staff of ten district field engineers to promote sound engineering practice and the welfare of the structural steel industry. Efforts of the field engineers will be centered on the arousing of a better appreciation of the advantages of structural steel for bridge and building construction.

Lee H. Miller, chief engineer of the institute, opened a training school May 15 for the ten engineers, instructing them in the aims and policies of the institute. The country has been divided into ten districts, each to be served by a field engineer.

E. N. Adams, formerly consulting engineer in private practice and construction engineer with George W. Harvey, Boston, will be in charge of district one, consisting of Maine, New Hampshire, Vermont, Massachusetts, Rhode Island and Connecticut, his headquarters being in Worcester, Mass.

J. N. Keenan, formerly field engineer for the institute, will head up the second district, consisting of the New York metropolitan district, including northern New Jersey and Long Island.

B. J. Hastings, in charge of district three, formerly was associate professor, department of architecture, Carnegie Institute of Technology, Pittsburgh, and consulting engineer for Janssen & Cocken, that city. His headquarters will be in Philadelphia, and his territory consists of New York state outside the metropolitan district, Pennsylvania, southern New Jersey, Maryland, District of Columbia and Delaware.

Alexander Miller, a former field engineer with the institute, will be located in Cleveland, in charge of the fourth district consisting of Ohio, Michigan, Kentucky and West Virginia states and Indiana, excepting the northern part.

J. G. Allen, formerly structural engineer with Stone & Webster Inc., Boston, heads district five with headquarters in Birmingham, Ala., his territory consisting of Virginia, North Carolina, South Carolina, Tennessee, Georgia, Florida, Alabama, Mississippi and Louisiana.

Henry Penn, formerly assistant professor of civil engineering, Armour Institute of Technology, and with Sargent & Lundy, both of Chicago, will have his headquarters for district six in that city. His territory will consist of the northern parts of Illinois and Indiana.

C. C. Tracy will be in charge of Wisconsin, Minnesota, North Dakota, South Dakota, Montana and Wyoming, with offices for district seven in Milwaukee. He formerly was structural engineer with Densmore, LeClear & Robbins, Boston.

G. E. Doyen, formerly structural engineer with Dwight P. Robinson & Co. Inc., New York, will be in charge of district eight with headquarters in St. Louis, and covering Missouri, with the exception of the western part, Illinois, excepting the northern section, and Arkansas.

Jack Singleton, placed in charge of district nine of Kansas, Oklahoma, Iowa, Nebraska and the western part of Missouri, will have his headquarters in Topeka, Kans. His former position was chief engineer and general manager, Capital Iron Works Co., Topeka.

W. E. Emmett, formerly structural engineer with the Moore Dry Dock Co., Oakland, Calif., will be in charge of the Pacific coast states of Washington, Oregon and California, and also Idaho, Utah, Nevada and Arizona. His offices for district ten will be in San Francisco.

Machine Tool Builders Seek Remedy for Low Profits of Industry

Advocate Modernization of Builders' Plants, Co-ordination of Cost Methods and Standardization of Machine Elements—Discuss Trade-Ins

LIVELY discussion of current business problems marked the twenty-sixth spring convention of the National Machine Tool Builders' association, held May 22 and 23, at Hotel Stevens, Chicago. More than 100 members attended the two general sessions held on Tuesday, while many remained for the numerous group meetings scheduled for Tuesday evening and Wednesday morning and afternoon.

The meeting was opened by P. E. Bliss, president, Warner & Swasey Co., Cleveland, and president of the association. He commented on the fact that for the sixth consecutive month the total of orders as reported to the association in March had steadily increased. He declared that the best judgment as reflected in current reviews of business indicates that the machine tool industry is not likely to experience any marked recession soon.

Less Unethical Practice

Mr. Bliss then reviewed a number of problems facing the industry, including the question of trading in used machines as a part of the purchase price of new equipment, costs of engineering service and builder-dealer relations. He declared that there is some evidence to the effect that unethical practices are being reported less frequently, indicating that the work of the association is bearing fruit. The speaker then spoke of the opportunities open to the industry. He divided those into two groups, the first of which afford chances to better the situation as a result of individual effort, and second those opportunities arising from co-operative activities, either of a general nature involving the entire industry or of those in which members of each group of builders participate. Mr. Bliss declared that the subject of the fair rate on investment, standardization, cost accounting procedure, collection of statistics are problems for the consideration of all machine tool builders acting collectively. He next referred to the activities of the organized groups and emphasized the fact that great opportunities for accomplishment lie in this field. Commenting on this feature of the association's activities, he said:

"Probably our best chance today to further most of our needs comes from the proper organization, leadership, and direction of these association groups. Already notable advances have been made in some parts of our industry because of the better understanding and better co-operation resulting from this more intimate contact. Some of the subjects which have lately been handled to the greatest advantage, and which offer opportunity for further exploitation, are those which relate to standardization of sizes, the issuance of standard forms of quotations, the adoption of better credit and collection policies, and the analysis and proper handling of presumed departures from sound trade practices.

Edward A. Muller, King Machine Tool Co., Cincinnati, treasurer of the association, read a brief report showing the organization to be in a strong financial position.

E. F. duBrul, general manager, presented a brief summary of recent activities of the association, including group meetings at Rockford, Cincinnati, Cleveland and Springfield, and progress in attacking the problems of cost accounting and standardization. In conclusion he called attention to the fact that hydraulic feeds are becoming more prominent in machine tool design and are asserting an important influence on the business. He declared that the development that is going on is being worked out by different members without relation to or information from each other. This means that many mistakes are being duplicated at great cost to industry. Many of these mistakes, he declared could be avoided if the industry itself would pool information about its mistakes and failures.

Thomas B. Frank, treasurer, Cincinnati Planer Co., presented a report of the committee on cost accounting. The committee recommended that certain principles in cost accounting be adopted and that the association employ an advisor on cost systems who could visit important plants for the purpose of promoting greater uniformity in methods.

These proposals were discussed extensively by a large number of machine tool builders. It seemed to be the consensus of opinion that it is not feasible to formulate a standard system which will suit the needs of all manufacturers, but that the principles underlying cost accounting methods might well be adopted. There also was evident an unmistakable feeling on the part of many speakers that, discussions on cost accounting having persisted for a quarter of a century, it now is time that definite action be taken. Others commented on the fact that the low return on capital in the industry is sufficient proof of laxity in cost accounting methods to warrant the expenditures proposed. After extensive debate, a resolution was adopted to the effect that it was the sense of the convention that the principles advocated by the cost committee be approved and that a suitable cost accounting counsellor be employed.

America Produces More

Following a brief report by Edward P. Welles, president, Charles H. Besly & Co., Chicago, chairman of the committee co-operating with the department of commerce, he introduced W. H. Rastall, chief of the machinery division, bureau of foreign and domestic commerce, Washington. Mr. Rastall presented some interesting figures taken from a recent report of a German organization to the League of Nations. This report showed that in point of volume the American machinery industry produces 57 per cent of the world's machinery. Thirteen per cent is furnished by Germany, and a like percentage by the British industry. This report also shows that American machinery builders pay three times as much as the German rate for wages, but that the American workman produces four and a half times as much as the German workman.

Mr. Rastall declared that in spite of the gratifying percentage of machinery built in the United States, only 35 per cent of the volume of machinery in international trade goes to American houses. From this he concludes that American machine tools are undersold in the world's markets.

J. Wallace Carrel, vice president and general manager, Lodge & Shipley Machine Tool Co., Cincinnati, and chairman of the dealer relations and exposition committees, presented brief reports for those bodies. In reporting on the exposition he announced the vote recently obtained by mail as to the time of the next exposition. A total of 61 members favored the 1929 show, while 55 preferred the 1930 event. In view of this ballot, the members of the exposition committee unanimously recommended that the next exposition be held in 1929 and that a committee of five be appointed by the president to conduct the exposition. This report was adopted.

Adopt Simplified Shaft Sizes

An extensive report on the committee of standards was presented by Mr. duBrul. It indicated that a great volume of work has been done during the past few months and that greater progress is being made than at any time in the association's history.

Several important recommendations made by this committee were adopted by the convention. In the first of these the committee recommended that machine tool builders adopt a simplified list of shaft sizes as follows:

For shafts under 1 inch in diameter, sizes are in sixteenths or multiples thereof; from 1 inch to 2¾-inch diameter, eighths or multiples thereof; and for 2¾ to 6-inch diameter, fourths or multiples thereof. This recommendation was unanimously adopted. On recommendation of the committee, the convention approved a resolution stating that it is the opinion of the association that in the proposed standards for the mounting of electric motors certain points such as size of bolt holes, distances between bolt holes, key ways, diameters and length of motors and several other items should be included in the specification.

The standardized milling machine spindles which were adopted April 1 last year have now been in use more than a year and in order to give them official acceptance as National Machine Tool Builders association standards, a recommendation was passed according this official recognition and requesting that the standards be approved by the American Engineering Standards committee as American standards. The convention also acted favorably on the request of the committee for authorization to proceed with the study of a standardization of vises and vise jaws so as to make gripping members interchangeable.

One of the most important features of the afternoon session was the presentation of a paper entitled, "A Method of Handling Appraisals for Trade-In Deals," by J. R. Porter, president, Marshall & Huschart Machinery Co., Chicago. Mr. Porter outlined a typical case in which the prospective buyer of a new machine wants to turn in a used machine, applying the value of the old machine on the purchase of the new. He pictured the temptation presented by this situation to dealers and manufacturers to assign an exaggerated value to the old machine in order to facilitate the sale of the new equipment. Mr. Porter then described the practice of his company which has been in effect for several months. He said:

"We have selected as an appraiser one who is known as a strictly second-hand dealer in machine tools, and not competitive to us on any new equipment. We have blank forms which are carried by the salesmen, and when a customer offers a second-hand machine to be taken in trade, the salesman fills out this form to the best of his ability, and it is submitted to the appraiser, who, at his own discretion, makes a buying offer to us from the report given him, or in some cases, from inspection. This price is offered by us to the customer and is absolutely adhered to. The second-hand appraiser has agreed to take any and all machines on which he sets a price, from us at the price of appraisal made by him. However, should we elect to retain the second-hand machine for ourselves, we are to pay the appraiser 10 per cent of the appraisal price. In the event that the price submitted on any machine to us by the appraiser in our judgment is not a fair price to the customer, we reserve the right to raise the price, and in the event the deal is consummated, the appraiser receives no recompense for his services on this deal. However, if the appraiser's price is raised by us, it is understood that we are willing to take the machine at the price which we have set, regardless of whether we ourselves secure the order for the new machine.

"Some of the advantages of the appraisal plan are that it eliminates the necessity of a salesman dickering with the customer on the price of second-hand machinery, thus saving time and energy. It also eliminates the former custom of the salesman endeavoring to sell his own sales manager second-hand machines at prices that are higher than they could be resold at a profit."

A similar plan is in effect in New York City and middle New York state. O. O. Van Dyck, Van Dyck-Churchill Co., New York, spoke briefly of the success which has attended the inauguration of the plan in New York. Mr. Porter declared that of 205 machines recently appraised in the Chicago district, 64 were bought in at the appraiser's price by the appraiser, dealers paid for ten at the appraised price, and dealers paid for 11 at the price above the appraised price. The remaining machines were disposed of independently of the purchase of new equipment.

An exceptionally clear-cut analysis of price policy, prepared by R. E. Flanders, manager, Jones & Lamson Machine Co., Springfield, Vt., was presented in the absence of Mr. Flanders by Henry S. Beal, assistant manager of that company. This address is presented elsewhere in this issue.

Discusses Price Policies

In the ensuing discussion, Col. L. S. Horner, president, Niles-Bement-Pond Co., New York, supported the keynote of Mr. Flanders' address which is "the best policy is to set the price at the figure that will bring the highest continuous returns," but urged that it be supplanted to read "highest continuous price and stick to it." Colonel Horner declared it is very important to know what the costs are, and equally important to establish a firm price. He described the firm price policy as one in which the bidder submits a price and does not change it except when a change in specification occurs. He cited an instance in which a small number of executives controlling 85 per cent of the production in a certain industry were called to account by an important banker because they had not been making an adequate return on their investment. The banker threatened

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How Shall New Prices Be Announced?

SEVERAL machine tool executives exchanged views on the practice of announcing new prices. A questionnaire recently circulated on this subject showed a wide divergence of practice in this regard. Several manufacturers expressed entire satisfaction with the practice of allowing only ten days for the completion of old contracts after the announcement of a new price. Exception to this rule is made in the case of bids for the government and schools and for the railroads. Some difference of opinion as to the advisability of excepting the railroads was apparent, several speakers declaring that the incentive offered should be sufficient to induce the railroads to complete negotiations within the ten-day limit.

Jobbers Should Form National Body To Promote Their Interests

By George H. Charls

WHOM the Gods would destroy they first make mad and what but madness could prompt the frenzied competition and ruthless buying which is slowly but surely undermining a magnificent prosperity? Has overproduction never existed before that business men should lose all poise and reason with its advent at this time?

Is it possible that blind selfishness has completely possessed the hearts and minds of those responsible, for the moment making them forget that all civilized human activity is based upon co-operation? Have they forgotten that "there is no kind of life, whether we are transacting public or private affairs—at home or abroad —those in which we alone are concerned—or with others—that is free of obligation. Must buyer and seller learn all over again that "Whatsoever a man soweth, that shall he also reap?"

Some lay the blame at the door of the buyer; some attribute it to the seller. Without desire to indict either, have not conditions reached a limit and degree of insufferable, intolerable miscarriage for both buyer and seller to unite in averting the disaster which so obviously threatens the purchasing power of the nation? Both buyer and seller face a very grave responsibility, a crisis which neither can neglect with impunity.

Is it not time to realize that when a body has been weakened by neglected ills, the merest exposure may bring serious disease? All business economists sense this danger. The business magazines are full of comment regarding the poor showing made by the steel industry, which in the year 1927 averaged 5.22 per cent, or just half of the net return averaged by all industries of the nation.

The report of an analyst in IRON TRADE REVIEW reveals this startling fact. For a billion dollars expended in new and more efficient steel making equipment in the last ten years, there is not a dollar of increased earnings visible.

"In the year 1927, eleven automobile manufacturing companies netted 28.5 per cent on their total capital.

"Twenty-three steel manufacturers representing 85 per cent of the industry netted 5.2 per cent on their total capital."

Everyone recognizes that the steel industry has slipped into a deplorable state, and that it is up to the steel industry to get itself out of this state. It seems that there is one definite, decisive means to this end and that is through co-operative right thinking; the sort which gives due consideration to the ethics and economics of business in its broadest and loftiest sense.

Manufacturers and fabricators, buyers and sellers must co-operate as they have never co-operated before.

The National Association of Flat-Rolled Steel Manufacturers was organized for the purpose of assembling facts and figures on production, capacity, demand, general and particular trend of business, potential and prospective markets, the supply and demand of the material to be purchased, simplification and standardization of commodities, trade research and sales promotion, marketing and distributing factors, and the fostering of virility suited to arouse, sustain, and develop decent, sane, legitimate, economic business ethics and policies.

In so far as its influence can be exerted, it is committed to the policy of building up a better, finer relationship between its membership and those powerful and imporant distributing factors—the jobbers of the United States.

It would seem that both the mills and the jobbers had been growing too unmindful of their dependency one upon the other; of their obligation to support each other in the spirit of mutual helpfulness and protection.

In addressing the metal branch of the National Hardware association we endeavor to have that association define what constitutes a jobber; to establish or re-establish exactly who are jobbers of flat-rolled steel, as a very important fundamental, also to develop if possible, what is the accepted and logical line of demarcation between a jobber and a dealer.

Would this not be a constructive work to undertake?

It has been established that there is, and always must be, a definite place for the jobber, the distributor of flat-rolled steel products who performs the proper function of stocking and of selling to the retail trade. Therefore, the jobber and distributor of flat-rolled steel products is the natural channel, the natural point of contact between the mills and retail trade. The mills must depend upon these distributors to furnish a complete, continuous contact with those who supply the final consumer, which must always remain unbroken by indifference or lack of co-operation on the part of the jobber.

It is our hope to enlarge upon the function of jobbers in the distribution policies of flat-rolled steel industry and to have the jobber accept the responsibility of becoming a real constructive promulgator of the mills' products to the dealer and retailer. There is no question but that the mills require the enthusiastic services and co-operation of the jobber; that the jobber can better distribute his products to the retailers than anyone else.

Would it not be wise for all legitimate jobbing distributors of flat-rolled steel products to have a recognized national association to formu-

(*Concluded on Page* 1419)

Offers Suggestion for Practical Teamwork

IN THE accompanying article the author makes the practical suggestion that the jobbers and distributors of flat steel products organize for the purpose of promoting their interests and assuming their responsibilities to their customers, to the mills and to the public. The article is abstracted from a paper presented before the annual convention of the American Steel and Heavy Hardware association, Boston, May 23. The author is president, National Association of Flat Rolled Steel Manufacturers, Cleveland.

Seek Light on Merchandising

Members of American Steel and Heavy Hardware Association Consider Problems of Distribution—Discuss Obligations of Jobber and His Relation to Manufacturer—Elect Officers

OPINIONS relative to the need of better merchandising and particularly to the proper relations between manufacturers and distributors were freely aired at the nineteenth annual convention of the American Steel and Heavy Hardware association at the Copley-Plaza, Boston, May 22-24.

In his annual address at the opening session Tuesday morning, E. McK. Froment, Froment & Co., New York, president of the association, emphasized the shrinkage profits in the industry, as demonstrated by the composite iron and steel price index of IRON TRADE REVIEW, and the necessity for improved earnings. He recommended executive will .power as a means of fostering improvement.

Look to Better Profits

Considerable discussion was evoked on the subject of steps that can be taken to increase the net margin of profit obtainable in the distribution of steel and heavy hardware. E. J. McCarthy, Beals, McCarthy & Rogers, Buffalo, declared that warehouses wishing the elimination of small mill shipments should set an example by not asking mills to make similar shipments on jobbers' accounts. He suggested that a semiannual check be made of warehouse profit margins in order to discover and eliminate unprofitable transactions.

An address on "The Value of the Service Rendered by the Warehouse Distributor," was presented by Walter S. Doxey, editor of *Daily Metal Trade*.

He traced the trend of recent developments in the jobbing trade, including the establishment of differentials in eastern warehouse districts. He outlined a broad field of opportunity for jobbers and declared that service is the keynote of success in this business. "The real problem," he said, "is not the value customers place on jobbers' service, but the actual value the jobbers themselves place upon it."

"From purely an economical standpoint, to maintain and enhance his position as a vital factor in the distribution of merchandise, the middleman must perform certain fundamental functions. He must render a definite service to the manufacturer or producer as well as to the consumer. In fact, this service must be so tangible as to answer the frequently arising charges that prices to the user, and hence the cost of living, would be materially lowered if goods went direct from the maker to the users."

New Officers

AMERICAN STEEL AND HEAVY HARDWARE ASSOCIATION

President
H. A. SADLER
Sioux City Iron Store, Sioux City, Iowa

First Vice President
A. J. LOCKWOOD
Edgar T. Ward Sons Co., New York

Second Vice President
R. H. SANDERSON
E. P. Sanderson Co., Cambridge, Mass.

The report of the iron and steel committee of the association, prepared by A. J. Bragg, Egleston Bros. & Co., Long Island City, N. Y., and read by the secretary, showed that 1927 was an unsatisfactory year for jobbers but that an improvement appeared in the first four months of this year.

Discussioin of the foreign steel situation disclosed real concern over the subject among seaboard jobbers. In this discussion, presented by R. H. Sanderson, E. P. Sanderson Co., Boston, an extension of differentials was recommended. During last year, 97,000 tons of foreign steel came through the port of New York, most of which represented losses to mills rather than to warehouses, it was disclosed.

The average net profit of 34 warehouses last year was $2.05 on every $100 of business, a decrease of 37 cents from the 1926 average, the report of the cost of doing business committee, presented by A. L. Philbrick, Congdon & Carpenter Co., Providence, R. I., showed. The average turnover was 3.17, a slight gain over the preceding year.

Organization of a committee to work out uniform price revisions for cutting iron and steel warehouse materials to customers' specifications was recommended by W. J. Holliday, of the W. J. Holliday Co., Indianapolis, in a discussion of "Cutting Charges" at a session Wednesday. He pointed out many inconsistencies in the present cutting extras, which he declared, are 20 years old and were originally designed to cover wastage and are totally inadequate today.

Charles J. Graham, president of the Bolt, Nut and Rivet Manufacturers association, briefly reviewed the bolt and nut merchandising plan and outlined the purposes of a meeting scheduled for next month.

This meeting and the plan on which it is based were announced in the May 3 issue of IRON TRADE REVIEW.

A motion that the American Steel and Heavy Hardware association urge congress to pass the Capper-Kelly fair trade bill was presented by S. L. Orr, Orr Iron Co., Evansville, Ind., in his report of the committee on national legislation affecting trade relations. The motion was passed.

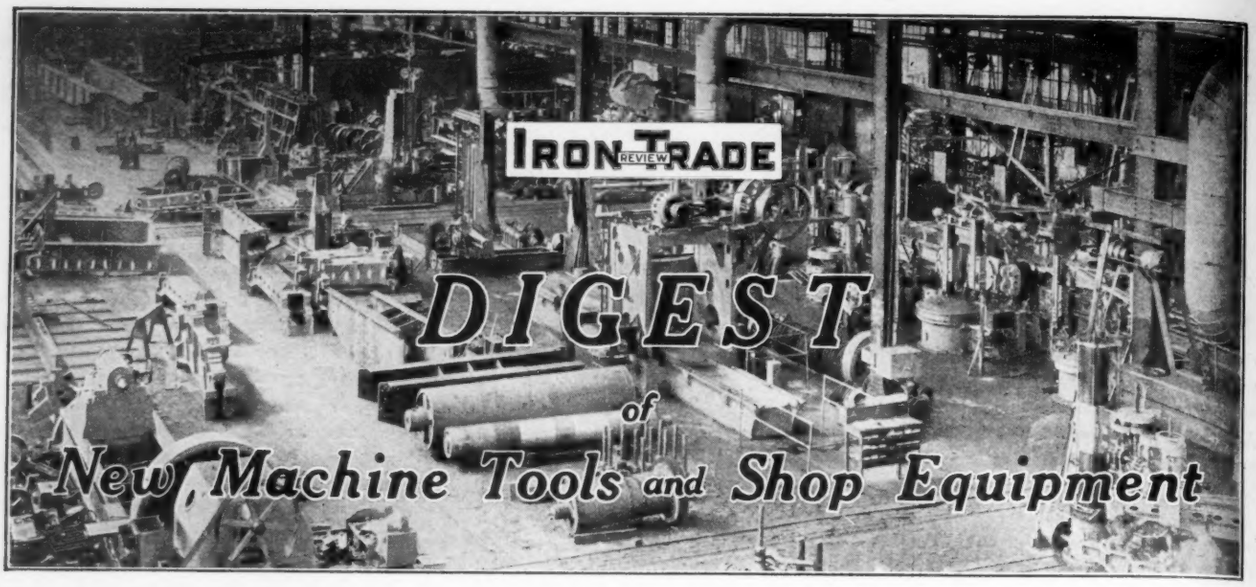
An address on the "Purpose of the Association of Flat Rolled Steel Manufacturers" was given by George H. Charls, president of the association. This address which appears in abstract elsewhere in this issue, proved the vehicle for a suggestion that jobbers form an organization comparable to that of the manufacturers of flat steel products.

Discussions on other subjects and problems important in the industry completed the morning's program.

Jobbers Should Organize National Body

(*Concluded from Page* 1418)

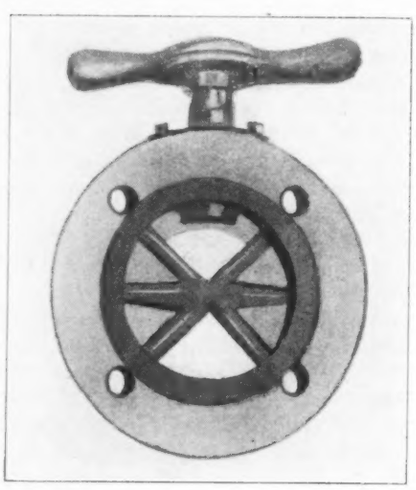
late trade policies and standards of ethics, and to be able to speak with an authoritative voice to the mills? The associations among steel jobbers now in existence appear to be so divided in their interests and purposes that there is not the unity of opinion and effort to accomplish the best distribution of steel or to work out the best economic relationship with the mills. Is not the need of such a national organization obvious, one that would bring together the best minds to consider all phases of intra-industrial and intra-commodity competition, and as a consequence evolve the surest and most progressive policies to meet the new competition. In so far as our study, thought, and conclusions of steel distribution have progressed we urge this suggestion as of paramount importance to effect a harmonious co-operative, mutually profitable relationship between the mills and the jobbers.



Introducing Valves of Seatless Type

No. 132

The Smolensky Valve Co. Inc., 1931 West Forty-seventh street, Cleveland, has developed a new seatless flanged valve which can be used as blow-off, globe or gate valves on lines carrying steam, oil, water or any fluid. One of these valves in the open position is shown in the illustration. The valve consists of a valve body with double straight-way passage stationary disk face, movable geared valve disk, three-toothed valve stem, valve bonnet, valve handle, valve wedge ring and valve assembly ring with coil springs provided for the purpose of grinding the valve automatically and to assure tight closing. When the valve is open, the movable disk face covers the equally shaped stationary disk face in the valve body and there is no seat to wear. The valve handle indicates valve open or closed, turning to the left opens, turning to the right closes. The valve stem turns the movable valve disk back and forth within one-quarter of a circle which opens or closes. The device also is applied to the manufacture of motor-driven valves and can be made in any size from ⅛ to 100 inches.



No. 132—Seatless-type flanged valve

Grinder Sharpens Tools for Gear Cutting

No. 133

Gleason Works, Rochester, N. Y., is placing on the market a tool grinder which will sharpen the tools used on any of the straight bevel gear generators and 60-inch spiral bevel gear planing generators built by that company. This machine, shown in the illustration, has two wheels; the upper tools are sharpened on one wheel and the lower ones on the other. Grinding always is against the cutting edge, eliminating the possibility of burning the edges. Tools can be ground to any side rake angle as well as front rake angle. Adjustable weights on the opposite end of the tool holders keep the

Iron Trade Review's Calendar of New Equipment

No.	Item	Builder	Comment	Date Described
115.	Speed reducers	Palmer-Bee Co.	Simple design; herringbone type	May 10
116.	Automatic brake	General Electric Co.	For super-synchronous motors	May 10
117.	Welding and cutting torch	Alexander Milburn Co.	Utilizes same tip for both	May 10
118.	Air compressor	Ingersoll-Rand Co.	Portable; smaller size	May 10
119.	Press brake	Cincinnati Shaper Co.	All-steel construction; larger size	May 10
120.	Knife switches	Westinghouse Electric & Mfg. Co.	Back-of-board type	May 10
121.	Electric motor	Century Electric Co.	Direct-current; 1/6 to 1/2 horsepower	May 17
122.	Drum switches	General Electric Co.	For small hoist, crane and machine tools	May 17
123.	Speed reducers	D. O. James Mfg. Co.	Herringbone gear; roller bearing	May 24
124.	Stoker	Westinghouse Electric & Mfg. Co.	Single retort; underfeed	May 24
125.	Pipe clamp	Cleveland Wrought Products Co.	Pressed steel; light weight	May 24
126.	Lamp cover and inspection light	Benjamin Electric Mfg. Co.	For general shop application	May 24
127.	Toolroom lathe	South Bend Lathe Works	Designed for maximum accuracy	May 24
128.	Grinding machine	Brown & Sharpe Mfg. Co.	Plain type; built extremely rugged	May 24
129.	Electric instruments	Westinghouse Electric & Mfg. Co.	Alternating and direct-current	May 24
130.	Shop truck	Pittsburgh Producers Supply Co.	All-steel welded; roller bearings	May 24
131.	Rod grinder	Ingersoll-Rand Co.	Air-operated; portable	May 24
132.	Valve	Smolensky Valve Co. Inc.	Seatless; flanged type	May 31
133.	Grinder	Gleason Works	Sharpens gear generator tools	May 31
134.	Geared-head lathe	Reed-Prentice Corp.	14 and 16-inch; roller bearing spindle	May 31
135.	Sheet flattener	Sutton Engineering Co.	Removes lengthwise and crosswise bow	May 31
136.	Gear generator	Farrel-Birmingham Co. Inc.	Larger size; cutting performed faster	May 31

holders away from the wheel. Work is pushed across the wheel by hand and is fed in by a hand nut. The wheel spindle runs in oil on precision ball bearings. The standard machines are overhead belt driven, but if desired they can be arranged for motor drive as shown.

Announces Two Sizes of Geared Head Lathe

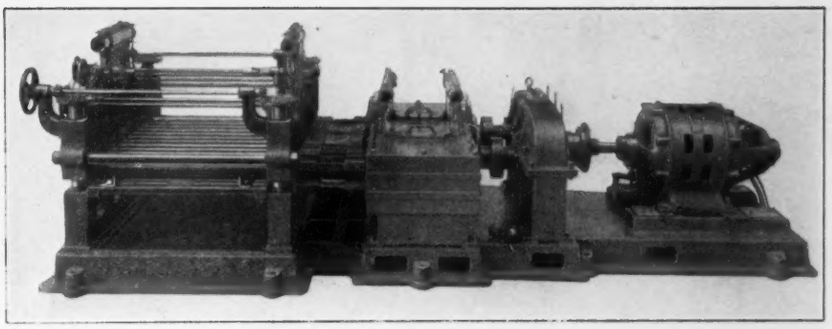
No. 134

Reed-Prentice Corp., Worcester, Mass., is introducing a new model sliding geared-head lathe built in 14 and 16-inch sizes. The headstock of this lathe features a silent smooth and powerful sliding gear transmission, eight spindle speeds being available through three levers at the front of the head. The spindle runs in two double thrust-taking roller bearings manufactured by the Timken Roller Bearing Co., Canton, O. A quick-change gear box provides 41 changes of feeds and threads. End gearing permits compounding and special pitches. The driving motor is mounted within the head end cabinet leg on a hinged bracket adjustable through screw and nut. Either belt or chain drive is available. The bed is 6 feet long, admitting 31½ inches between centers.

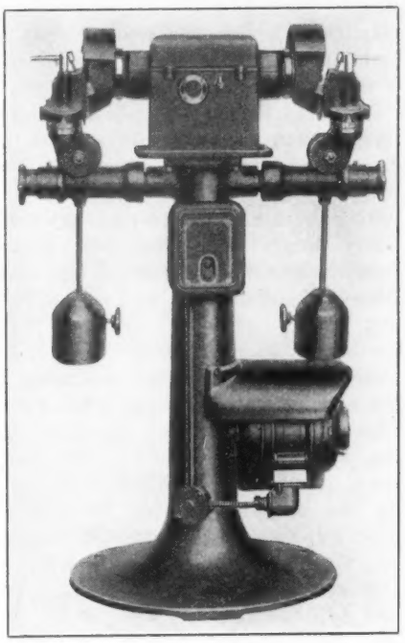
Flattener Takes Cross-Bow from Steel Sheets

No. 135

Sutton Engineering Co., 1308 Park building, Pittsburgh, is introducing a 60-inch sheet flattener which operates on a new principle and which is claimed to deliver a sheet that is flat both lengthwise and crosswise. Two of the top rolls are adjustable so that they can be crossed, their opposite ends coming below the surface line of the bottom rolls. This bends the dished sheet so that it passes through as an obtuse inverted vee and breaks the transverse elastic and stretches the edges so that by regulating the amount of this deflection a flat sheet can be obtained no matter how badly dished. It is said that crossing of the rolls does not break the scale on blue finished sheets. All rolls are driven through flexible spindles with the connections made through flexible couplings. The machine shown in the illustration has seventeen 4-inch diameter deflecting rolls and one set of pinch rolls at the entering end. The number and length of rolls can be increased or decreased to suit conditions. Top rolls are adjustable as a unit in addition to independent adjustments. The machine eliminates longitudinal waves by having proper size rolls properly spaced and the leaving top roll having an independent adjustment to insure the sheet against curving up or down as it leaves.



No. 135—Sheet flattener which removes lengthwise and crosswise bow

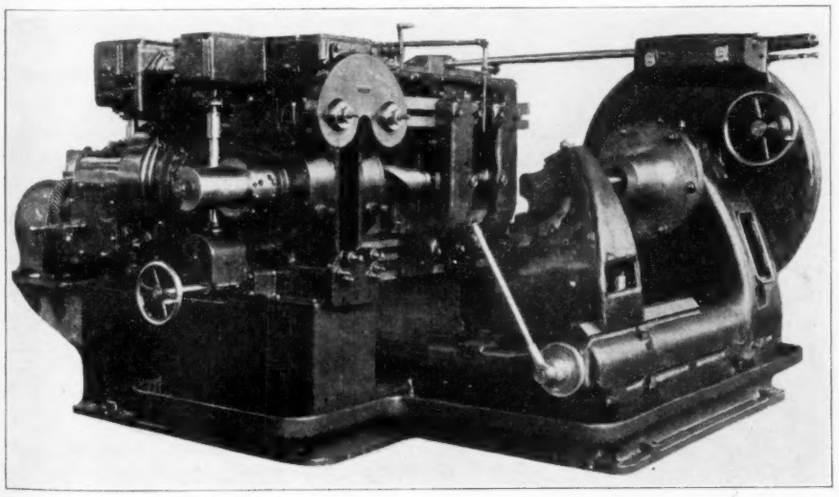


No. 133—Gear generator tool grinder

Generator Cuts Gears at Increased Speeds

No. 136

Farrel-Birmingham Co. Inc., 344 Vulcan street, Buffalo, has designed a new size of the Sykes-type gear generator incorporating improvements which permit continuous tooth herringbone, single helical and straight tooth gears to be cut in considerably less time. It is also claimed that the tooth finished and contour accuracy is high grade. This machine, which is shown in the accompanying illustration, will cut double helical gears of either continuous or staggered tooth design from 1 to 49 inches diameter, from 1 to 18 inches face width and from 10 to 1½ diametrical pitch. It will generate straight tooth or single helical gears up to 10 inches face width between the limits of diameter and pitch given above. It will cut cluster gears simultaneously, an operation said never to have been done before. The design of the machine is along the same general lines of the smaller machine which has been available, but since it cuts larger and heavier gears, the problems of production have been solved in a slightly different manner.



No. 136—Gear generator of larger size and increased cutting speed

Manufacturers, jobbers, contractors and users attended the sheet metal show in Cleveland, May 22-25

Exhibits Sheet Metal Working Equipment

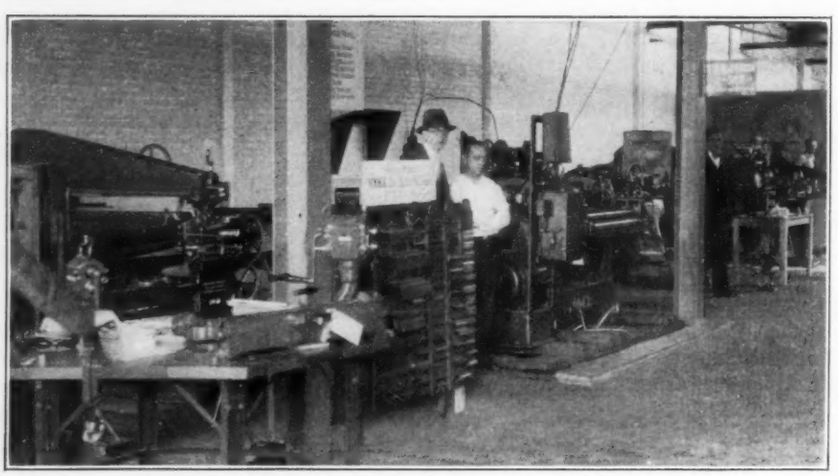
EQUIPMENT for the forming and fabricating of sheet metal products was displayed by the J. M. & L. A. Osborn Co., Cleveland, in its "sheet metal show" held concurrently with the joint convention of the National Association of Sheet Metal Contractors and the Ohio Sheet Metal Contractors association, in Cleveland, May 22-25.

With the exception of a few large pieces of equipment, such as shears and brakes, all products exhibited are carried in stock by the Osborn company, one of the leading sheet metal jobbers of the Cleveland district. A rack of different grades of sheets attracted interest of the visitors, copper, copper bearing, galvanized, lead coated, and many special and patented types being shown. Representatives of the American Brass Co., American Rolling Mill Co., American Sheet & Tin Plate Co., Canton Art Metal Co. and Superior Sheet Steel division of the Continental Steel Corp. were at the exhibition.

Armstrong-Blum Mfg. Co., Chicago, exhibited in operation its No. 8 bandsaw and No. 2 hacksaw as well as several hand saws. Dreis & Krump Mfg. Co., Chicago, operated for demonstration a 10-foot hand brake and a box and pan machine.

Niagara Machine & Tool Works, Buffalo, had on display several of its shears and was demonstrating for the first time its No. 131C combination wiring, turning and burring machine. Other bench tools for sheet metal forming also were shown. Yoder Co., Cleveland, displayed a gang slitter and rotary shears. Unishear Co., Cleveland, demonstrated its sheet metal cutting equipment, including a portable, small and its 0-54 sizes. Throatless shears were operated by the Marshalltown Mfg. Co., Marshalltown, Iowa, and welding equipment by the Buckeye Welding Co., Cleveland, and the Gas Products Co., Columbus, O.

Monel metal sheets in plain, satin and polished finishes were shown by the International Nickel Co., New York. Parker-Kalon Co., New York, had on exhibition its sheet metal screws. Rawlplug Co. presented samples of its plugs as used in various materials. Conductor elbows were shown by the Ferdinand Dieckmann Co., Cincinnati, and shanks and circles by the Berger Bros. Co., Philadelphia. In addition, rivets, screws, chain, asbestos, soldering equipment, and many other products for the building trades were exhibited.



SHEET METAL FABRICATING EQUIPMENT WAS EXHIBITED

Machine Tool Builders Investigate Profits

(*Concluded from Page* 1417)

that if they did not improve the rate of profit during the next year, he would seriously consider withdrawing their credit in his bank. The result was that these manufacturers increased their profits considerably during the ensuing year, largely through the adoption of firm price bidding.

In conclusion Col. Horner declared that many machine tool builders may achieve certain economies by taking the following steps:

(1) Weed out the dead timber in the personnel.

(2) Ascertain costs and other statistical information necessary to the operation of the business.

(3) Reduce lines of business to those which are profitable.

(4) Maintain adequate research activities and redesign machines when necessary.

(5) Budget engineering, production and sales.

(6) Install up-to-date equipment.

The last mentioned item was the subject of discussion by several speakers during the day. P. O. Geier, Cincinnati Milling Machine Co., Cincinnati, declared that if all machine tool builders would make it a point within the next two years to replace 25 per cent of their production equipment, they would not only reduce the cost of operations, but would be given such a demonstration of the efficiency of modern machine tools, that the move would have a very beneficial psychological effect on the builders themselves.

Editorials

Solution Lies Deeper Than Laws

FOR the first time in recent years the president of the American Iron and Steel institute has devoted practically all of his semi-annual address to the specific problem of low profit in the industry. The action of Mr. Schwab in officially recognizing this serious condition and in actively attempting to hasten its solution is gratifying not only to makers, fabricators and users of steel, but also to many leaders in finance and business who have been worrying over the sorry plight of steel.

Mr. Schwab's diagnosis of the ills of the industry is accurate and comprehensive. He points to the large amount of capital invested, the efficient equipment and organization of the industry and its present high rate of operation. Yet the profit on the investment "amounts to little more than one can earn from a savings bank deposit."

The remedies suggested by the president of the institute are two-fold. One is to eliminate waste through the curtailment of cross-hauling of steel products. The second is to modify existing laws which "force uneconomic conditions into existence." Mr. Schwab's specific recommendation is that a committee be formed "to study this problem . . . . to recommend . . . . a constructive plan which may result in such modification of existing law as will enable the factors in the steel industry, and indeed possibly in other industries, to achieve those economies which are so important and at the same time suggest such plan of government knowledge and possibly supervision . . . . as will adequately . . . . protect the public interest."

Much as steel executives may feel indebted to Mr. Schwab for his earnest efforts in helping to solve the industry's problems, they cannot escape the conclusion that he is advocating legislative medicine for economic ills. In the opinion of many authorities, present legal restrictions are only a minor factor in the existing problem. The main obstacle to improved conditions is the failure of steel manufacturers to recognize the fact that they themselves are to blame. To attribute the ills to laws or to any other outside influence is to close one's eyes to the deficiencies within the industry. And above all, does not the suggestion for a plan of "government knowledge and possibly supervision" sound like an admission of helplessness on the part of steel?

Certainly the executives of the great steel industry are capable of solving the present problem. Surely they are qualified to lead their industry into paths of profit without enlisting artificial aids. Doubtless favorable legislation would help the situation, but to place full reliance on it would encourage industry to shirk its own responsibilities.

No Legislative Remedy for Coal

THE senate committee which has been investigating the bituminous coal strike has concluded its hearings, with no apparent result than publicity more favorable to the strikers than the operators, and congress within a few days will have adjourned without enacting any legislation bearing on the strike. Undoubtedly it is in the interest of the public that congressional interference in the struggle has been negligible.

The facts concerning both bituminous coal and anthracite are available. Five years ago the Hammond fact-finding commission, at an expense in excess of $600,000, sifted the industry thoroughly and rendered as impartial a report as seems possible on so controversial a subject. There is no further need for investigation and little need for legislation. The coal crisis is an economic one and the solution cannot be legislated.

It is now fourteen months since the bituminous coal miners struck. At no time has any consumer lacked supplies at a reasonable price. It still is evident that a finish fight, hard as it may seem, is desirable.

"Chains" Not Injurious in Steel

"CHAIN" methods are undoubtedly the paramount consideration in retail merchandising today. Cigar, candy and drug stores, groceries, shoe repair shops, banks, even garages, are being set up or acquired by corporate interests in unrelated parts of the country and operated from a central agency. There is much speculation over the fate of the individual retail unit and whether this era of big business in little business will really aid the consumer.

Now, the "chain" idea may be new in retail merchandising but in steel—in most industries, in fact—it is an old story. If distribution by a single interest in other than its own locality constitutes a "chain," then the great majority of iron and steel producers may be so classified.

What is the Ryerson interest, with plants in nine cities and representation in eight more from coast to coast, but a warehouse "chain"? The Carnegie Steel Co., with domestic sales representation in fifteen cities, is a "chain." If production as well as distribution be considered, then the United States Steel Corp. as well as its individual components has been a chain for 25 years.

In retail merchandising it is feared that the "chain" store will stamp out local competition and eventually put the consumer at its mercy. Certainly the experience of the "chain" idea in iron and steel has not been unhappy. In the warehouse field the "chains" generally have provided a brand of competition as good as the strictly local ventures and frequently have been factors for stabilization. Each year the Steel corporation is producing a smaller proportion of the country's steel, indicating a relatively stronger position is being acquired by the so-called independents. There are a number of small producers whose securities are more valuable than most of those of the "big ten" and who netted a higher per cent of profit last year.

In iron and steel the unit which puts out a worthy product, is managed conservatively and is fair to labor, stockholder and consumer succeeds. The same virtues should bring the same reward in any field.

As Goes Detroit, So Goes Steel

STEEL producers may well feel sensitive over some of the prices they have been making to automotive users but they are indebted to this industry more than to any other major outlet for steel for the tonnage that has enabled them to better last year's operating rates.

The vitality of the automotive industry is the more striking compared with dragging demand from the railroads, the oil country and the building industry. True, April output of passenger cars and trucks at 409,948 fell short of the 413,379 of March, but had April as many working days as March it would have turned out 442,744 units. And the all-time monthly record, set in April, 1926, is 441,306 units.

Early in the quarter, when the railroad advisory boards were estimating freight car requirements, automotive manufacturers in the Great Lakes district estimated they would need 28.5 per cent more cars than in the second quarter of 1927. This would indicate the production of about 1,450,000 units this quarter, compared with 968,881 in the first quarter. It scarcely seems probable that May and June will see output approximating the million mark, but with the Ford Motor Co. coming back fast the freight car estimate may not be so wide of the mark. In any event, the incomparable appeal of individual, effortless transportation is the largest single factor in current steel production.

Right Thinking Aid to Industry

STUDY of the mental health of employes in industry is growing in importance. The time has not yet come when the place of the psychiatrist is fixed as a permanent one in the advisory councils of industrial administration, but this is being strongly emphasized as a need.

The president of the Illinois Society for Mental Hygiene recently discussed at length the application of psychiatry to the solution of labor problems before representatives of large industrial and business organizations of the Chicago district. He declared it is the business of the psychiatrist to find out why the kicker kicks, what causes a worker to grouch, to sow dissension, to shirk, to day dream, to lose interest in his work or suffer other forms of mental and emotional disturbances that cause great losses.

Undoubtedly the psychiatrist is inclined to over-estimate the possibilities of the practical application of his science to the solution of labor problems. Nevertheless, many employers are becoming impressed with the importance of getting below the surface to determine the basic causes of mental and emotional maladjustment among employes. Eventually, the psychiatrist may hold a place of importance in the industrial field.

Trade Secrets Become Passe

NOT so many years ago manufacturers were loathe to divulge or discuss plant practices and operations in the presence of other manufacturers, but since the war this attitude has been changing. Drawn together by a common purpose in 1917 and 1918, even competitors joined hands that the country might profit. With the conclusion of hostilities, the desire for co-operative effort continued, the result being that trade and technical organizations have undergone remarkable growth in the last ten years.

As an example of the unselfish liberal attitude now predominating, the spring meeting of the American Society of Mechanical Engineers at Pittsburgh recently was notable. Relatively few of the technical papers were of a controversial nature, but they were of types which created numerous questions. The willingness with which the various speakers answered queries was commendable. Although this policy once would have been considered treasonable, it now is regarded as essential if a business is to be progressive.

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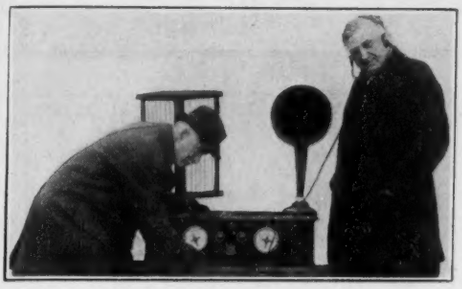

Charles M. Schwab "attuned" to institute problems. Page 1410.

WHAT is "on the mind" of industry today—what is holding its attention, absorbing its thought? A clew to the answer of this important question is to be found in the reports of recent conventions of business and trade organizations. Almost without exception the principal topic of discussion has been *profits;* how to obtain them for profitless enterprises, or how to increase them. All are most intensely devoting themselves to this problem. Last week IRON TRADE REVIEW reported several such conventions; this week several more. Note the drift, by referring to the reports.

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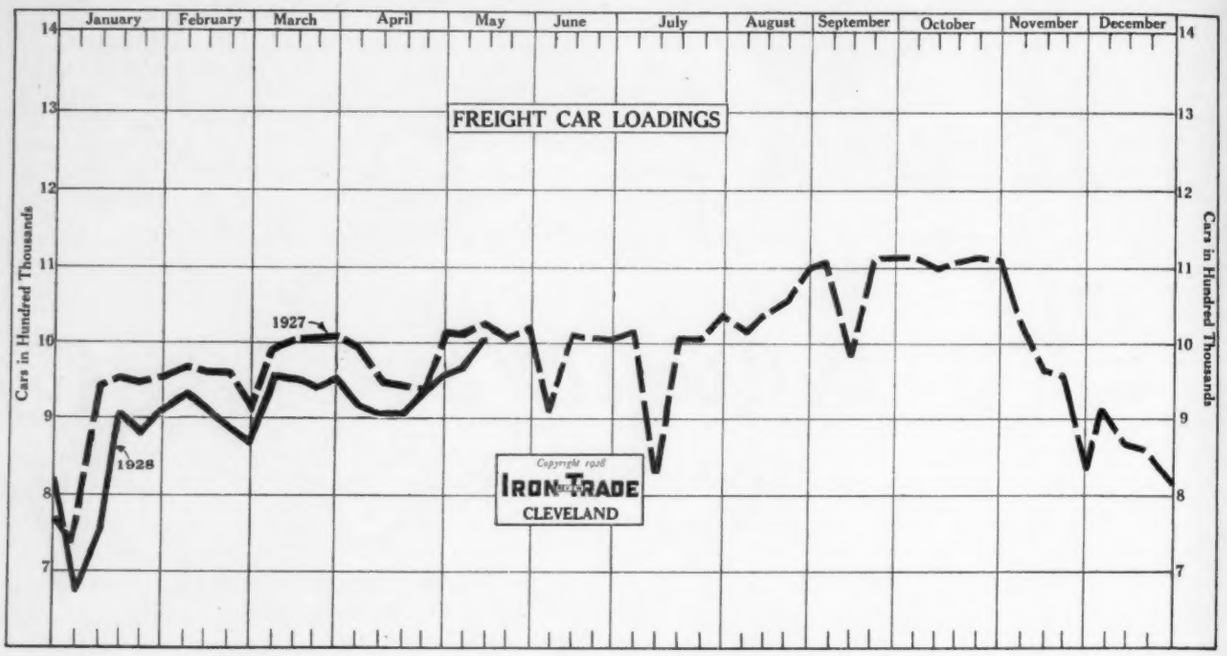
The Business Trend



Traffic Showing Healthy Expansion

By JOHN W. HILL, Financial Editor

FOR the first time this year, freight car loadings in the second week of May exceeded a total of 1,000,000 cars. This was significant of a healthy expansion of trade and industry. Freight movements still fail to measure up to the level of one year ago, but the spread is growing steadily more narrow and during the summer months a gain over 1927 is looked for.

CONDITIONS in the heavy commodities of coal and ore chiefly explain the tendency of freight car loadings this year to lag behind those of 1927. Early last year there was a tremendous spurt of coal production against the strike in the bituminous fields which came on April 1. This boosted car loading totals abnormally for the first months of 1927.

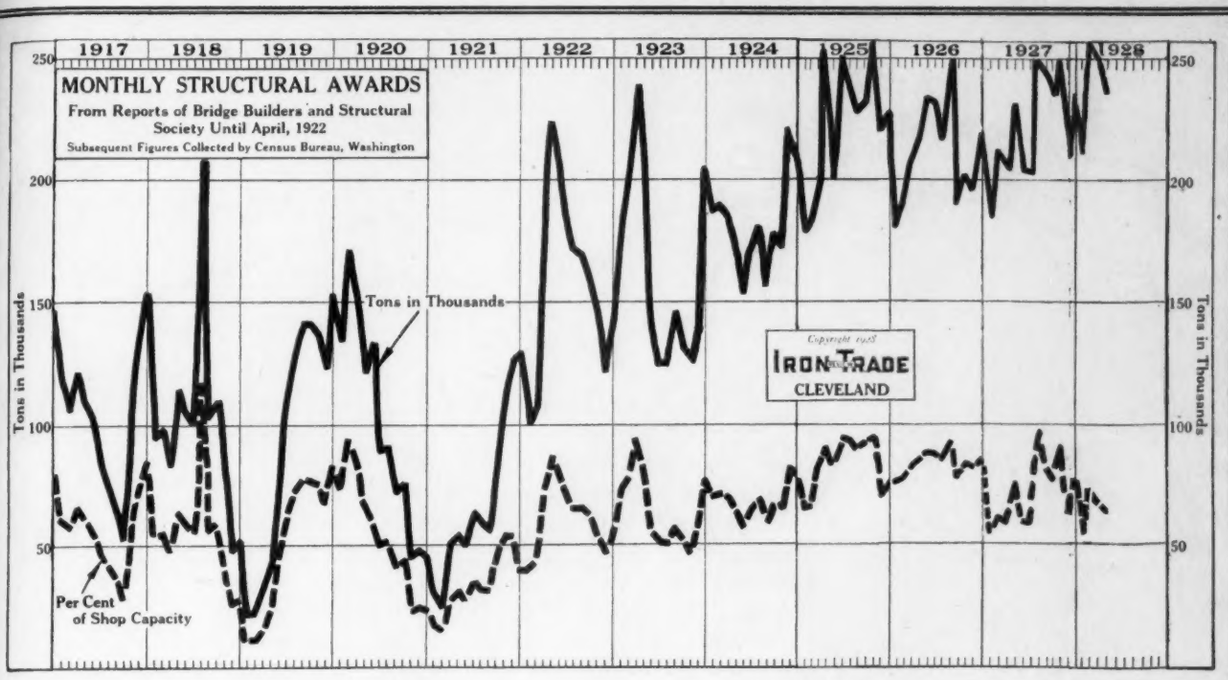
THERE has been no such surge of coal output in 1928. Moreover, ice conditions in the Great Lakes this year practically prevented any shipment of ore during April. Last year ore shipments amounted to 1,500,000 tons during that month. Consequently, this year there was a sharp falling off of shipments of ore to furnaces in April and traffic records have reflected this situation.

NORMAL conditions are now asserting themselves and good traffic totals are probable for some time. That the decrease in carloadings compared with one year ago has not indicated depressed conditions in general trade, is evidenced by the large volume of miscellaneous and less than carload freight.

IN SOME lines, in fact, activities are even better than they were at this time in 1927. The most conspicuous example of this is to be found in the iron and steel industry. The seasonal slump already had set in by the first of June, 1927, and this was aggravated by the complete withdrawal of the Ford Motor Co. from automobile market, pending inauguration of a new model.

BY THE same token, this year, Ford production is steadily rising. There is every indication that this will be one factor in helping to sustain operations in the steel trade at a higher level this summer than was true of 1927. Last year the slump was rather drastic and extended. Present prospects are that the summer letdown in 1928 will be considerably more moderate and probably not so prolonged.

The Business Trend

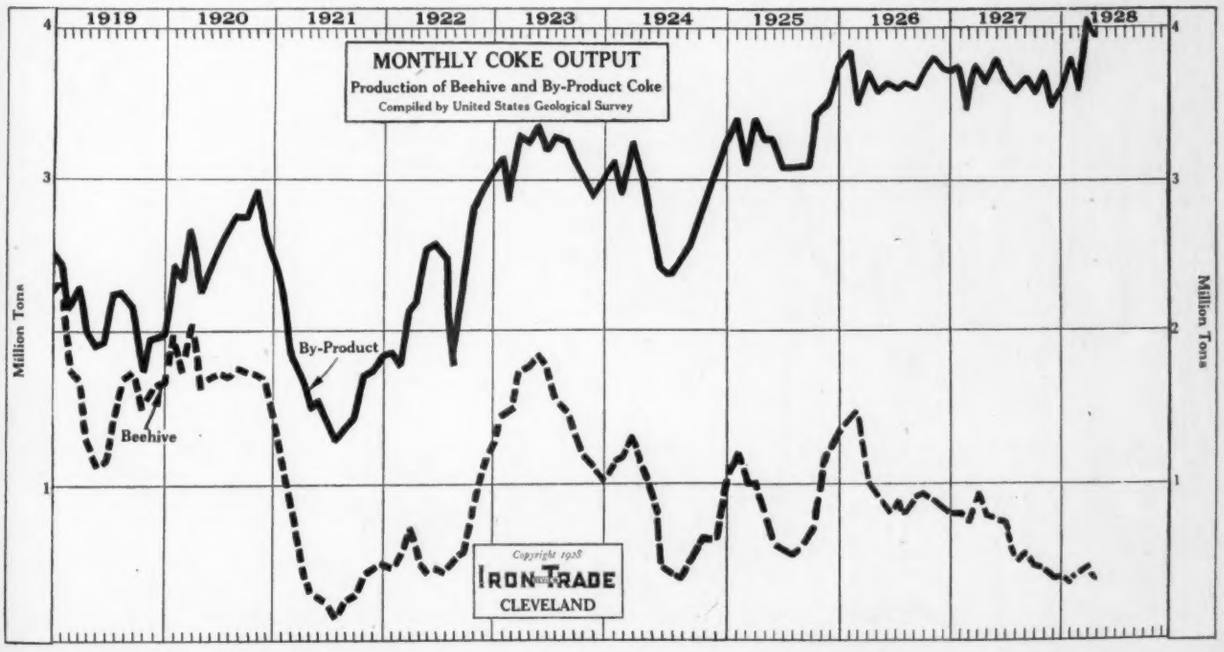


Structural Awards

APRIL brought a rather sharp decline in new orders for structural steel. According to reports to the department of commerce from principal manufacturers, computed bookings for all companies totaled 236,250 tons against 258,750 tons in March and 262,500 tons in April, 1927. Expressed in ratio of capacity the April bookings were 63 per cent against 69 per cent one month before and 70 per cent one year ago. Shipments increased in April. For the first four months bookings are above one year ago.

Coke Production

WITH the exception of March the production of by-product coke in April was the highest of any month in history. Beehive output declined during the month, following three successive increases. By-product output in April was 3,925,195 tons against 4,064,940 tons in March, and 3,707,000 tons in April, 1927. Beehive production dropped from 449,000 tons in March to 377,000 in April. This compares with 780,000 tons of beehive coke produced in April, 1927.



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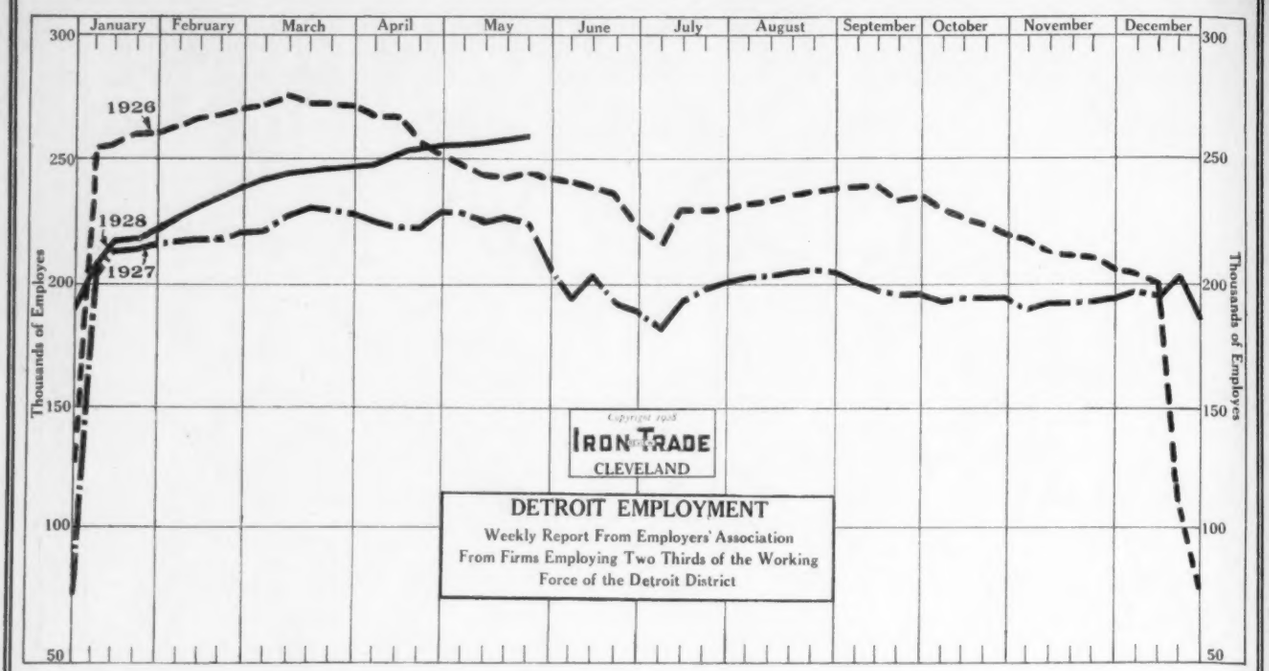
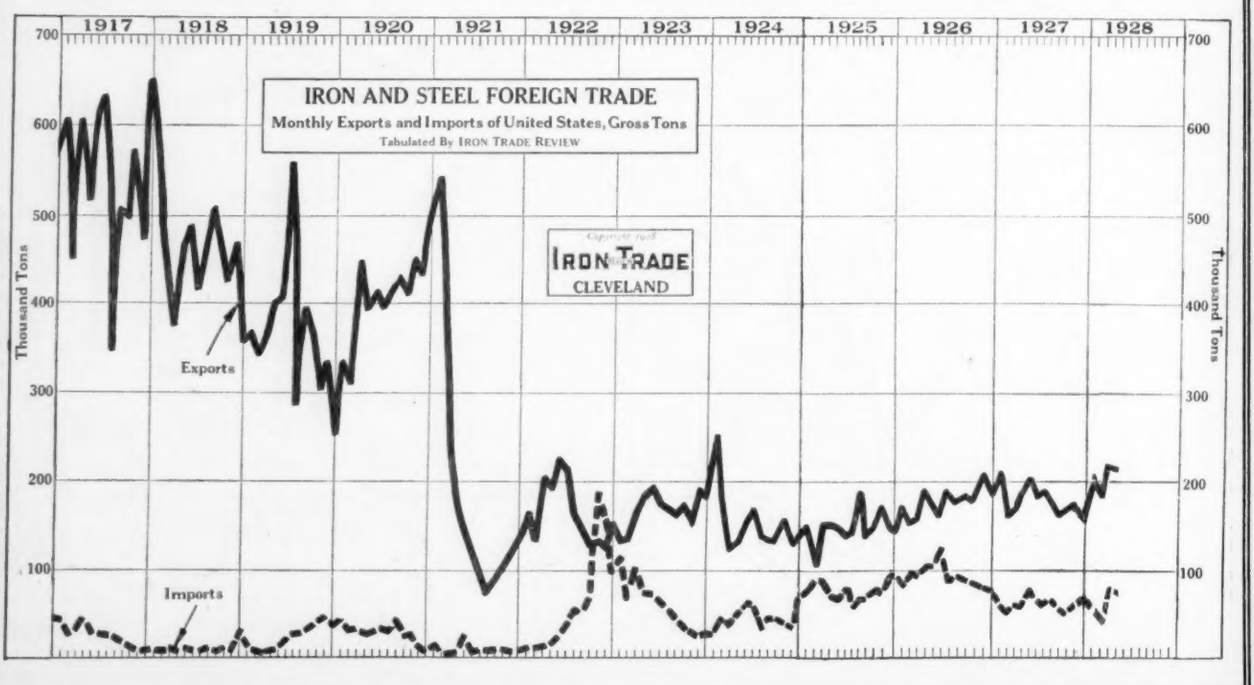


Detroit Employment

EMPLOYMENT in the Detroit automobile center is continuing to make steady gains. For the week ended May 22, the Detroit Employers' association reports total payrolls at 257,030 an increase over the preceding week of 533 and one of 32,462 over the corresponding week of 1927. The total is also well above that of the like period of 1926. The significance of the Detroit figures lies in the fact that they are rising at this period, while one year ago they were declining.

Steel Foreign Trade

BOTH exports and imports of iron and steel declined in April. With a total of 215,184 tons, exports during the month were 6751 tons below the March total. A substantial gain is shown over exports of 192,339 tons for April, 1927, however. Imports for the month were 72,329 tons against 74,128 tons in March and 60,374 tons one year before. Scrap was the chief export in April, totaling 40,616 tons against 26,510 tons one month previous. Pig iron imports were 20,845 tons against 16,155 tons in March.



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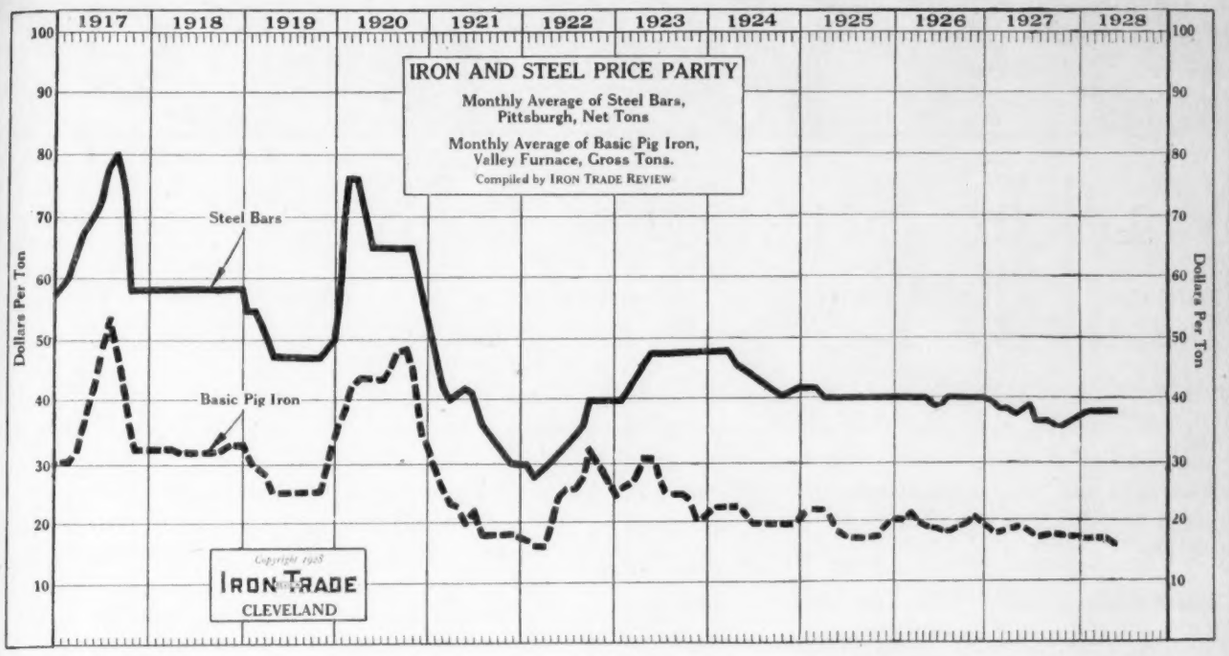
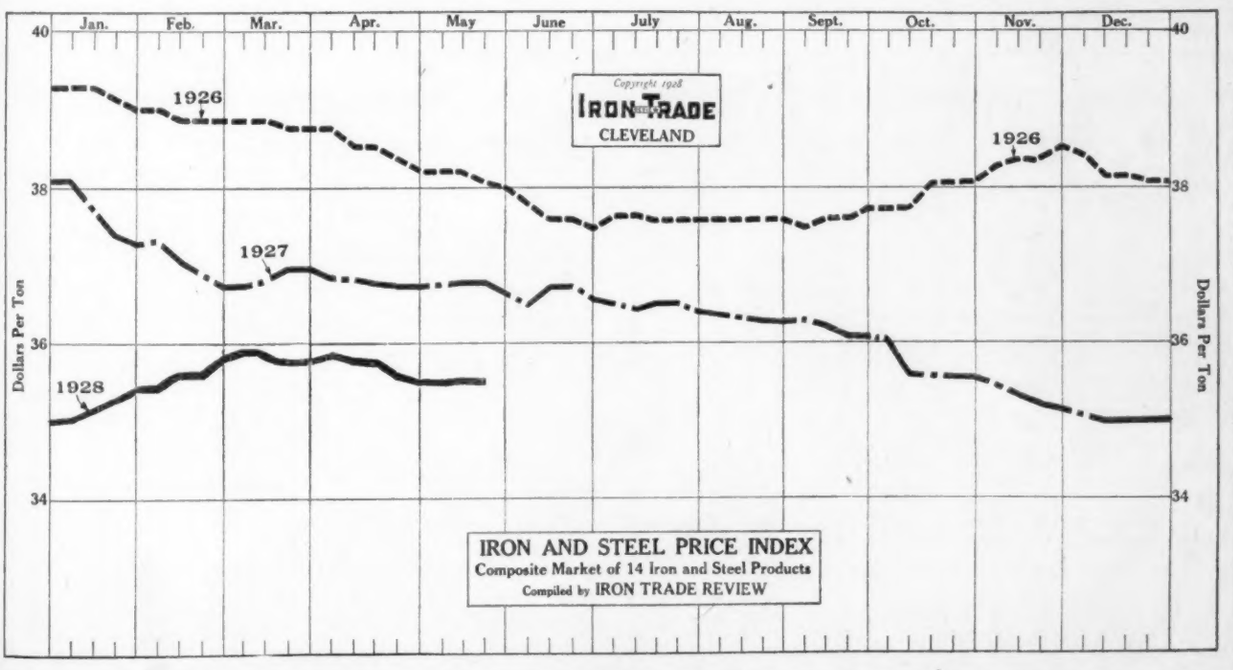


Steel Price Parity

THE spread between finished steel and pig iron has been growing steadily wider. In May the price of basic valley pig iron stood at $16.25 a ton, the lowest ebb touched since 1915. Steel bars at Pittsburgh stood at $37 a ton. This compared with a low point for steel bars of $35 a ton last fall. Steel bars have held at their present level during most of the current year. Pig iron, however, has been slipping. It averaged $16.75 a ton in April and $17 in March.

Steel Price Index

IRON and steel prices, as measured by IRON TRADE REVIEW'S composite market average of 14 iron and steel products, stood at $35.53 a ton last week. This was unchanged from the preceding week, but it represents a decline from two weeks before and from one month before. The price level of the industry is now more than 3 per cent below its level of one year ago, and less than 2 per cent higher than the low ebb touched late last year. Weak pig iron has helped to depress the general level.



Market Strength Is Recognized

Iron and Steel Sentiment Improves with Broader View—Rumor Tonnage Held Back for Last Half—Pig Iron Prices Soft—Mill Rate Down

CONFIDENCE that a good summer is ahead of the iron and steel industry has received marked support this week, no small part resulting from the interchange of views at the spring meeting of the American Iron and Steel institute.

Believe 1928 Volume Will Top 1927

Seeing the industry as a broad picture has stimulated a higher appreciation of the sustained volume of business. The subsidence in both demand and mill operations is more properly appraised as a seasonal factor, noteworthy for its moderation rather than its occurence. Wide acceptance comes to Charles M. Schwab's belief that this year's volume of business will exceed last year's.

A new factor is increasing speculation as to the extent business is being held back for the third and fourth quarters. Such developments as failure of a large eastern railroad to exercise its option for additional rail tonnage, the delay of the trunk lines in making equipment purchases, and the aloofness of most oil country buyers of pipe and tank work are regarded in some quarters as presaging a burst of business for late summer and early fall. Justified or not, the impression is growing that enough tonnage will be released to insure a brisk last half.

Consumers of iron and steel generally are buying strictly from hand-to-mouth. Third quarter orders are not yet a major factor and, excepting in pig iron, where the situation is weak, price is a minor consideration. Consumers foresee extension of current levels into the next quarter or, if an advance be decreed, an opportunity to cover advantageously. At the institute meeting a reform in distribution rather than an increase in price was advanced as the panacea for inadequate steel profits.

Steel Corporation Operations Decline

Steelmaking operations remain highest at Chicago where the average is 90 per cent, a recession of two points from last week and five points from the recent high. Pittsburgh and Mahoning valley schedules approximate 80 per cent. Steel corporation subsidiaries are operating this week at 83 per cent, compared with 85 per cent a week ago. With independent makers at about

Comparative Prices of Iron, Steel and Coke

Representative Market Figures for This Week, Last Month, Three Months and One Year Ago

	May 30, 1928	Apr. 1928	Feb. 1928	May 1927
PIG IRON				
Bessemer, del. Pittsburgh	$19.26	19.26	19.26	20.86
Basic, valley	16.25	16.75	17.00	18.10
Basic, eastern, del. eastern Pa.	19.10	19.25	19.50	20.75
*No. 2 foundry, del., Pittsburgh	18.76	19.01	19.01	20.26
No. 2 foundry, Chicago	18.00	18.50	18.50	20.00
*Southern No. 2 Birmingham	16.00	16.00	16.00	18.00
*Southern Ohio, No. 2 Ironton	19.00	19.00	19.00	20.00
**No. 2X, Virginia furnace	20.50	20.50	20.50	22.00
**No. 2X, eastern, del. Phila.	21.26	21.26	20.91	22.26
Malleable valley	17.25	17.25	17.25	18.50
Malleable, Chicago	18.00	18.50	18.50	20.00
Lake Superior charcoal del. Chicago	27.04	27.04	27.04	27.04
Gray forge, val., del. Pittsburgh	18.76	18.56	18.51	19.76
Ferromanganese, del. Pittsburgh	109.79	104.79	104.79	99.79
*1.75 to 2.25 silicon. **2.25 to 2.75 silicon.				
COKE				
Connellsville, furnace, ovens	2.60	2.60	2.65	2.80
Connellsville, foundry ovens	3.50	3.65	3.75	3.80
SEMIFINISHED MATERIAL				
Sheet bars open-hearth, Youngstown	32.50	32.75	34.00	34.00
Sheet, bars, open-hearth, Pittsburgh	34.00	34.00	34.00	33.75
Billets, open-hearth, Pittsburgh	33.00	33.00	33.00	33.00
Wire rods, Pittsburgh	44.00	44.00	43.50	42.00

	May 30, 1928	Apr. 1928	Feb. 1928	May 1927
FINISHED MATERIAL				
Steel bars, Pittsburgh	1.85	1.85	1.85	1.85
Steel bars, Chicago	2.00	2.00	1.95	2.00
Steel bars, Philadelphia	2.17	2.17	2.17	2.17
Iron bars, Chicago	2.00	2.00	1.95	2.00
Shapes, Pittsburgh	1.85	1.85	1.85	1.85
Shapes, Philadelphia	2.07	2.08	2.08	2.07
Shapes, Chicago	2.00	2.00	1.95	2.00
Tank plates, Pittsburgh	1.85	1.85	1.85	1.85
Tank plates, Philadelphia	2.10	2.10	2.10	2.17
Tank plates, Chicago	2.00	2.00	1.95	2.00
Sheets, black, No. 24, Pittsburgh	2.75	2.75	2.85	2.90
Sheets, blue anl., No. 10, Pittsburgh	2.00	2.05	2.10	2.25
Sheets, gal., No. 24, Pittsburgh	3.65	3.65	3.65	3.80
Sheets, black, No. 24, Chicago	2.85	3.05	3.05	3.10
Sheets, blue anl., No. 10, Chicago	2.25	2.25	2.25	2.40
Sheets, galvanized, No. 24, Chicago	3.80	3.90	3.90	3.95
Plain wire, Pittsburgh	2.50	2.50	2.45	2.40
Wire nails, Pittsburgh	2.60	2.60	2.60	2.55
Tin plate, per base box, Pittsburgh	5.25	5.25	5.25	5.50
SCRAP				
Heavy melting steel, Pittsburgh	15.00	14.85	15.05	15.50
Heavy melting steel, eastern Pa.	13.75	13.75	14.00	14.45
Heavy melting steel, Chicago	12.75	12.75	12.55	12.35
No. 1 wrought, eastern Pa.	15.25	15.25	15.25	16.75
No. 1 wrought, Chicago	12.90	12.45	12.40	12.75
Rails for rolling, Chicago	15.00	14.00	15.00	16.10

Current Prices for Rolled Steel Products

PRICES IN CENTS PER POUND UNLESS OTHERWISE INDICATED

STEEL PLATES

Pittsburgh	1.85c to 1.90c
Philadelphia, del	2.05c to 2.10c
New York, del	2.125c to 2.175c
Boston, del.	2.265c to 2.415c
Chicago	2.00c
Cleveland	2.04c to 2.09c
Buffalo	2.00c
Coatesville, Sparrows Point	1.95c to 2.00c
Birmingham	2.05c
Pacific coast, c.i.f.	2.25c to 2.30c

STRUCTURAL SHAPES

Pittsburgh	1.85c to 1.90c
Philadelphia, del.	2.06c to 2.18c
New York, del.	2.14c to 2.19c
Boston, del.	2.265c to 2.415c
Chicago	2.00c
Cleveland, del.	2.04c to 2.09c
Buffalo	2.00c
Bethlehem	1.95c to 2.00c
Birmingham	2.05c
Pacific coast, c.i.f.	2.35c

BARS

SOFT STEEL

Pittsburgh	1.85c to 1.90c
Chicago	2.00c
Birmingham	2.05c
Buffalo	2.00c
San Francisco	2.35c
Cleveland mill	1.85c to 1.90c
Cleveland delivered	1.87½c and 2.09c
Philadelphia, delivered	2.17c
New York, delivered	2.19c
Boston, delivered	2.265c to 2.415c
Pittsburgh, cold finishing	2.00c to 2.05c
Pittsburgh, forging quality	2.10c to 2.15c

RAIL STEEL

Chicago	1.85c
Eastern mills	1.75c

IRON

Chicago	2.00c
New York, delivered	2.14c to 2.24c
Philadelphia, delivered	2.12c to 2.22c
Pittsburgh, refined	2.75c to 4.25c

REINFORCING

Pittsburgh, billet	1.85c to 1.90c
Chicago, billet	2.30c to 2.75c
Chicago, rail steel	2.00c to 2.30c
Chicago, rail steel, road and bridge work	1.85c to 1.95c
Youngstown, billet	1.90c to 2.00c

COLD FINISHED STEEL

Cold finished steel bars, drawn or rolled, Pitts., Chi., c.l.	2.20c
Shafting (turned, polished) Pittsburgh	2.20c
Shafting (turned, ground) mill (Depending on size, 1 3/16 to 7-inch)	2.45c to 2.90c
Cold finished steel bars, Cleve.	2.25c

TIN AND TERNE PLATE

Prices per 100-pound box, Pittsburgh

*Tin plate, coke base	$5.25
Gary, Ind., base 10 cents higher.	
Long ternes, primes, No. 24	4.10c

*Price subject to quantity differentials.

SHEETS

SHEET MILL BLACK

No. 24, Pittsburgh base	2.70c to 2.85c
No. 24, Philadelphia delivered	2.92c to 3.02c
No. 24, Gary, Indiana Harbor,	2.80c
No. 24, Chicago, delivered	2.85c
No. 24, Birmingham, base	3.05c

TIN MILL BLACK

No. 28, Pittsburgh, base	2.90c
No. 28, Gary, base	3.00c

GALVANIZED

No. 24, Pittsburgh, base	3.60c to 3.75c
No. 24, Philadelphia, delivered	3.82c to 3.92c
No. 24, Gary, Indiana Harbor	3.75c
No. 24, Chicago, delivered	3.80c
No. 24, Birmingham, base	3.90c

BLUE ANNEALED

No. 10, Pittsburgh base*	1.95c to 2.10c
No. 10, Philadelphia, delivered	2.32c to 2.42c
No. 10, Gary, Indiana Harbor	2.20c
No. 10, Chicago, delivered	2.25c
No. 19, Birmingham, base	2.25c

*Plus 10 cents for 40 inches or wider.

AUTOMOBILE

No. 20, Pittsburgh base	4.00c

IRON

No. 10, Pitts., blue ann., c.l.	2.80c
No. 24, Pitts., box annealed, 1-pass cold roller, carload	3.75c
No. 24, Pitts., gal., c.l.	4.85c

(Turn to the following page)

76 per cent the national steel average is about 80 per cent.

Though pig iron prices generally are easy, it is not believed much third quarter buying has been discouraged thus far, as most consumers are not yet interested. Whether a Butler, Pa., has bought 25,000 to 50,000 tons of basic iron lacks confirmation, but quotations warrant a drop of 25 cents in the Valley market on basic, to $16 to $16.50. Some regular customers of a Valley stack have closed on foundry iron for third quarter at $17, while other makers quote $17.25. May shipments at Chicago have approached 100,000 tons. Prices are unsettled at St. Louis. At Cleveland 36,000 tons has been sold.

Big Scrap Orders Develop Weakness

Coke is not wanted by blast furnace interests, Connellsville heating coke has been sold down to $2.15, and sales of the foundry grade are moderate. Some eastern by-product coke makers have reaffirmed prices for the last half. Iron and steel scrap is unsettled in most districts, with large sales of melting steel at Chicago and St. Louis indicating further weakness. Ferroalloy contracting for the last half is brisk. An effort to stiffen semifinished steel for the third quarter is under way at present.

Chicago continues to lead the Pittsburgh district in heavy finished steel. A Milwaukee interest is reported buying against a requirement of 114,000 tons of plates and shapes for a south-western welded pipe line. Active structural projects at Chicago, which are expected to be placed by fall, total well over 135,000 tons. Plate specfications at Chicago are a third larger than a week ago and bar users spread their needs over so many sizes that deliveries are impeded. Pittsburgh makers of heavy finished material are receiving only moderate size orders and those are for immediate shipment.

Sheet Prices and Business Continue Uncertain

The aggregate of small, prompt orders enables Pittsburgh and Mahoning valley sheet mills to operate at 75 to 80 per cent. Automotive business changes little in volume but is more spotty. Competition for galvanized business is keenest, a condition reflected in prices. Blue annealed demand at Chicago is in contrast with the meager inflow of galvanized and black sheet orders. Sheet prices at some eastern points are so uncertain that some users are deferring purchasing. Tin plate mills still operate better than 90 per cent.

Important makers of both hot and cold rolled strip in the Pittsburgh district have taken more business in May than in April, reflecting in part the distribution of Ford parts orders. Some attractive automotive business also has developed for cold bar fiinishers. Efforts to break the cold finished market are claimed to have failed.

Composite Market Average

Based on Pig Iron, Billets, Slabs, Sheet Bars, Wire Rods, Steel Bars, Plates, Structural Shapes, Black, Galvanized and Blue Annealed Sheets, Tin Plate, Wire Nails and Black Pipe

This week (May 30, 1928)	$35.50
Last week (May 23, 1928)	35.53
One month ago (April, 1928)	35.67
Three months ago (February, 1928)	35.62
One year ago (May, 1927)	36.76
Ten years ago (May, 1918)	56.59
Fifteen years ago (May, 1913)	27.34

Weakness in pig iron has lowered the IRON TRADE REVIEW composite of fourteen iron and steel products three cents this week, to $35.50. A month ago this index stood at $35.56 and a year ago it was at $36.66

Current Rolled Steel Prices

PRICES IN CENTS PER POUND UNLESS OTHERWISE INDICATED
SEE ALSO PRECEDING PAGE

HOOPS, BANDS, STRIP

Hot strip, under 3-inch, Pitts. 2.15c to 2.40c
Hot strip, 3 to 6-inch, Pitts. 2.00c to 2.10c
Hot strip, 6 to 12-inch, Pitts. 1.85c to 2.00c
Hot rolled strip, 12 to 24-inch 16 gage and heavier, coils or cut lengths, 1.85c plate basis, or 2.00c blue annealed basis.
Hot strip, under 3-in., Chi..... 2.30c
Hot strip, 3 to 6-in., Chi..... 2.20c
Hot strip, 6 to 12-in., Chi..... 2.00c
Hot strip, 12 to 24 in., Chi.... 2.10c
blue annealed sheet basis.
Cold rolled strip, hard coils, 1½ inches and wider by 0.100-inch and heavier base, Pitts., Cleve., (over 3 tons) ..... 2.75c to 2.90c
Pitts., Cleve., (1-3 tons).... 3.00c to 3.15c
Worcester, Mass. 3.05c

ALLOY STEEL

Hot Rolled
F.o.b. Pittsburgh or Cleveland
Alloy Quality Bar Base is 2.65c

S.A.E. Series Number	Alloy differential	Net price 100 lb. bars
2000	0.25	$2.90
2100	0.55	3.20
2300	1.50	4.15
2500	2.25	4.90
3100	0.55	3.20
3200	1.35	4.00
3300	3.80	6.45
3400	3.20	5.85
4100 0.15-0.25 Mo.	0.50	3.15
4100 0.25-0.40 Mo.	0.70	3.35
4600 0.20-0.30 Mo. 1.25-1.75 Ni.	1.05	3.70
5100 0.60-0.90 Cr.	0.35	3.00
5100 0.80-1.10 Cr.	0.45	3.10
5100 Chrome Spring	0.20	2.85
6100 Bars	1.20	3.85
6100 Spring Steel	0.95	3.60
Chrome Nickel Vanadium	1.50	4.15
Carbon Vanadium	0.95	3.60
9250	0.25	2.90

TUBING

BOILER
Carload Discounts—Less-carloads 4 points Lower—F.o.b. Pittsburgh Mills

Steel 3¼ to 3¾-inch	42½
Charcoal iron, 3¼ to 4½-inch	9
Seamless hot rolled 3¼ to 3½-inch	46

Further discounts of five to seven 5 per cents for carloads on lap welded steel. On seamless hot rolled several more 5 per cents, and on charcoal from one 10 per cent to two 10 and one 5 per cents.

COLD DRAWN SEAMLESS
F.o.b. mill in desirable quantities
Random lengths over 5 ft.....55 per cent
Selected lengths, 1 to 18 ft.....53 per cent

WIRE PRODUCTS

To Jobbers in Carloads
F.o.b. Cleveland and Pittsburgh base.
Dealers 5 cents per 100 pounds extra

Bright plain wire, No. 9 gage..	2.50c
Annealed fence wire	2.65c
Galvanized wire, No. 9 gage....	3.10c
Barbed wire, painted	3.10c
Barbed wire, galvanized	3.35c
	Per 100 lbs.
Wire nails	$2.55 to 2.65
Galvanized nails	4.55 to 4.65
Polished staples	3.00 to 3.10
Galvanized staples	3.25 to 3.35
Coated nails, 100 lb. kegs, Sept. 1, 1926 extras apply....	2.55 to 2.65
Woven wire fencing (retailers) 12½ gage, 26-in. high 7-in. bars and 12-in. stays, per 100 rods, f.o.b. Pitts.....	$20.03

Joliet, DeKalb and Waukegan, Ill., Anderson, Ind., and Chicago prices $1 per ton over Cleveland-Pittsburgh base on products made there; Duluth $2 higher, Worcester, Mass., and Fairfield, Ala., $3 higher.

CAST IRON WATER PIPE

Prices per net ton
Class B Pipe

Six-inch and over, Birming'm	31.00 to 33.00
Four-inch, Birmingham	35.00 to 37.00
Four-inch, Chicago	43.20 to 45.20
Six-inch to 24-inch, Chicago....	39.20 to 41.20
Four-inch, New York	41.50 to 42.60
Six-inch and over, New York	38.25 to 38.60
Standard fittings, Bir. base.....	$100.00

Six to 24-inch, base; over 24-inch, plus $20; 4-inch, plus $10; 3-inch, plus $20; gas pipe fittings, $5 higher.
Class A pipe is $4 higher than Class B.

IRON AND STEEL PIPE

Base Discounts Pittsburgh and Lorain, O., to Jobbers in Carloads

	Black	Galv.
1 to 3-inch butt steel*	62	50½
1 to 1½-inch butt iron	30	13

Indiana Harbor, Ind., and Evanston, Ill., 2 points less, Chicago del., 2½ points less.
*To large jobbers these discounts are increased on black by 1 point and a supplementary discount of 5 per cent; on galvanized by 1½ points with a supplementary 5 per cent.

CHAIN, PILING, CUT NAILS

Cut nails, c.l., f.o.b. mills..... 2.80c
Chain, 1-in, proof coil, Pitts..... 6.00c
Sheet piling base, Pittsburgh.. 2.25c to 2.35c

RAILS, TRACK MATERIAL

Standard bessemer rails, mill $43.00
Standard open-h'th rails, mill $43.00
Relaying rails, St. Louis.....$24.00 to 31.00
Relay, rails, Pitts. 60 to 90 lb..$27.00 to 30.00
Light rails, 25 to 45, mills..... $36.00
Angle bars, Chicago base..... 2.75c
Spikes, railroad, Pittsburgh.... 2.80c
Spikes, small railroad, ⅞-inch and smaller, Pitts..... 2.80c
Spikes, boat and barge, Pitts. 3.00c
Spikes, railroad, Chicago 2.80c
Track bolts, Pitts., stand.... 70 off list
Track bolts, Chicago 3.80c
Tie plates, Chicago, Pitts..... $43.00

BOLTS AND NUTS

F.o.b. basing points, Pittsburgh, Cleveland, Birmingham and Chicago.
Discounts are for legitimate jobbing or large consuming trade purchasing in full-case lots, apply to lists of April 1, 1927.
Small lots are 55 to 60 per cent off.

CARRIAGE BOLTS
All sizes, cut thread ..... 70 off
Rolled thread ⅝x6 and smaller take 10 per cent lower list.
Eagle list .....70 off

MACHINE BOLTS
All sizes, cut thread ..... 70 off
Rolled thread ⅝x6 and smaller take 10 per cent lower list.
Lag screws ..... 70 off
Plow bolts, Nos. 1-2-3-7 heads ..... 70 off
Tap bolts ..... 70 off
Blank bolts ..... 70 off
Stud bolts without nuts ..... 70 off
Stove bolts, 75, 20, 10 and 5 off in pkgs. 75, 20, 10 and 5 with 2½ off in bulk.
Tire bolts .....60-5 off

NUTS
Semifinished .....70 off

HEXAGON CAP SCREWS
Milled .....80-10-10 off
Upset 1-in. diam. and smaller .....85-5 off

SQUARE HEAD SET SCREWS
Milled .....80-10 off
Upset 1-in. diam. and smaller....80-10-10 off

RIVETS

Struct., c.l., Pitts.-Cleve..... 2.90c
Structural, c.l., Chicago..... 3.00c
**⅞-inch and smaller, Pitts.....70 and 10 off
Chi., Cleve. .....70 to 70 and 10 off
**Some makers quoting 70 off with freight allowed on 300 pounds or more.

WASHERS

Wrought, c.l., Pitts. dist.....$6.75 off
Wrought, c.l., Chicago dist....$6.70 to 6.90 off
Lock: To dealers .....85-5 off
Lock: To consumers .....85 off

Raw Materials and Semifinished Products

SEMIFINISHED MATERIAL

Prices per gross ton

BILLETS AND BLOOMS
4 x 4-inch base

Pittsburgh, open-hearth	$33.00
Pittsburgh, bessemer	33.00
Youngstown	33.00
Cleveland	33.00
Philadelphia	38.30
Chicago	34.00
Forging, Chicago	39.00 to 43.00
Forging, Pittsburgh	38.00
Forging, Philadelphia	43.30

SHEET BARS

Pittsburgh	34.00
Youngstown	32.50 to 34.00
Cleveland	32.50 to 33.00
Chicago	35.00

SLABS

Pitts., Young., and Cleve.....	$33.00

WIRE RODS

Pittsburgh, Cleveland	$44.00
Chicago	45.00

SKELP

All grades, Pittsburgh	1.85c

IRON ORE

LAKE SUPERIOR ORE
Per Gross Ton, Lower Lake Ports

Old range bessemer, 51½ %....	$4.55
Mesabi bessemer, 51½ %	4.40
Old range bessemer, 51½ %.....	4.40
Mesabi nonbessemer, 51½ %.....	4.25

EASTERN LOCAL ORES
Cents per unit delivered at Eastern Pennsylvania and New Jersey furnaces

Foundry and basic, 58-63%.....	8.00 to 8.50
Copper free low phosphorus 58 to 65 per cent	nominal

FOREIGN IRON ORE
Cents per unit, alongside docks, Atlantic ports

Foreign manganiferous ore, 45-55% iron, 6-8% manganese	10.00 to 10.50
North African low phosphorus	nominal
Swedish foundry or basic, 65%	9.00 to 9.50
Spanish and North African basic, 50 to 60 per cent.....	8.50 to 9.00
Newfoundland foundry, 55%....	8.50 to 9.00

MANGANESE ORE

Prices do not include duty of 1 cent per pound of metallic manganese contained.

Brazilian .....36 to 38 cents	
Indian .....36 to 38 cents	
Caucasian (53-55 per cent) .....38 to 40 cents	

FLUORSPAR

85 and 5 per cent grade

Washed gravel, Kentucky and Illinois mines, per net ton....$15.00 to 16.00	
Washed gravel, imported duty paid, east. tidewater, net ton	15.00 to 16.38

REFRACTORIES

FIRE CLAY BRICK
Per 1000 f.o.b. works

First Quality

Pennsylvania .....$43.00 to 46.00	
Ohio	43.00 to 46.00
Illinois	43.00 to 46.00
Kentucky	43.00 to 46.00
Missouri	43.00 to 46.00
Maryland	43.00 to 46.00
Georgia and Alabama	40.00 to 45.00

Second Quality

Pennsylvania	35.00 to 38.00
Ohio	35.00 to 38.00
Illinois	35.00 to 38.00
Kentucky	35.00 to 38.00
Missouri	35.00 to 38.00
Maryland	35.00 to 38.00
Georgia and Alabama	30.00 to 35.00

SILICA BRICK

Pennsylvania	48.00
Joliet, Ill., East Chicago, Ind....	52.00
Birmingham	51.00

MAGNESITE BRICK
Per Net Ton

9 x 4½ x 2½	65.00

MAGNESITE
Net Ton Chester, Pa., and Baltimore base

Dead-burned grain magnesite..	40.00

CHROME BRICK
Net Ton Chester, Pa., and Baltimore base

9 x 4½ x 2½	45.00

Pig Iron

Rolling Mill Company Reported to Have Closed for 25,000 to 50,000 Tons of Basic—$16, Valley, Quoted—Market Fairly Active

MODERATE activity features the pig iron market. The American Rolling Mill Co. is reported to have closed for 25,000 to 50,000 tons of basic for its Butler, Pa., plant, and while details have not been disclosed $16, valley, was quoted. Valley furnaces have made a few sales of foundry iron for third quarter at $17, confirming the recent reduction of 25 cents. On another inquiry for 6000 tons of malleable, this time for delivery to Benton Harbor, Mich., a Cleveland maker is understood to have quoted $16, base, furnace, the same as quoted recently by one interest on 6000 tons of malleable for delivery to Muncie, Ind. Cleveland furnace interests booked more than 30,000 tons of various grades in the past week. Shipments from Chicago furnaces are at the April rate.

PITTSBURGH, May 29.—Pig iron inquiries are rare and the market is inactive. The carry-over from second to third quarter for some foundries is expected to be large, as a few of them are operating at only 25 per cent. While the American Rolling Mill Co. is understood to have purchased 25,000 to 50,000 tons of basic, the price has not been divulged. Negotiations developed the fact that $16, valley, was quoted, though some valley merchant producers would not go below $16.50. The inquiry was for 25,000 tons of basic for Butler, Pa. Bessemer is available at $17 to $17.50, only small lots moving at the latter price. Several regular customers of one valley merchant stack have bought foundry iron for delivery through third quarter at $17, base, valley. Others are quoted $17.25.

Boston, May 29.—A Vermont foundry is reported to have placed 1000 tons of No. 1X iron for delivery in the third quarter. A Worcester, Mass., foundry is expected to close in a few days on 1000 tons of No. 2 plain and No. 1X. The feeling is that business will pick up soon. Because of the competition between Buffalo, New York state and Mystic Iron Works furnaces the price situation is uncertain.

Buffalo, May 29.—Current pig iron inquiry totals several thousand tons, with sales in proportion. Demand shows improvement. Buffalo furnaces claim a minimum base price of $17 for third quarter foundry iron and $17.50 for malleable, quoting less only on low grade iron from stockpile. The Canadian Furnace Co. starts its Victoria furnace at Port Colborne, Ont., this week.

About 6000 tons of inquiry for foundry and malleable iron has developed from western Michigan. One seller of boat iron has piled stocks for shipment.

New York, May 29.—A fair amount of buying activity is reflected in the pig iron market here. This involves mainly small tonnages which mount up to a fair total. Ingersoll-Rand Co. has placed considerable tonnage and other buyers include the General Electric Co., and the Worthington Pump & Machinery Corp. Richmond Radiator Co. is expected to buy 5000 tons of foundry iron for Uniontown, Pa. Prices reflect considerable variation. One Buffalo maker which has been an important factor for business in this territory now has a minimum of $17, base, Buffalo. Another Buffalo maker shaded $16, base, Buffalo. An interesting feature of the market is that iron recently has been delivered by barge to points in New York harbor from Buffalo, eastern New York state, Massachusetts and eastern Pennsylvania furnaces.

Philadelphia, May 29.—The pig iron market here is featured by one inquiry for 2000 tons of foundry iron and inquiries for smaller lots. The volume of business is small. Prices are unchanged.

Pig Iron Prices

Per Gross ton

Bessemer, valley furnace	17.00 to 17.50
Bessemer, del., Pittsburgh	18.76 to 19.26
Basic, valley furnace	16.00 to 16.50
Basic, del., Pittsburgh	17.76 to 18.26
Basic, Buffalo furnace	17.00
Basic, del., eastern Pa.	19.00 to 19.25
Malleable, valley furnace	17.25
Malleable, del. Pittsburgh	19.01
Malleable, del. Cleveland	18.50
Malleable, Chicago furnace	18.00
Malleable, Buffalo furnace	17.50
Malleable, del. eastern Pa.	20.75 to 21.25
No. 1 foundry, Chicago furnace	18.50
No. 1X, eastern del., Phila.	21.76
No. 1X, Buffalo furnace	18.50
No. 2 foundry, valley furnace	17.00 to 17.25
No. 2 foundry, del., Pittsburgh	18.76 to 19.01
No. 2 plain, Everett, Mass., fur.	19.00 to 21.00
No. 2 plain, Buffalo furnace	17.00
No. 2 foundry, Chicago furnace	18.00
No. 2 foundry, Granite City	19.00 to 19.50
No. 2 foundry, Ironton furnace	19.00
No. 2 foundry, del. Cleveland	18.50
No. 2 plain, del. Phila	20.76
No. 2 plain Virginia furnace	20.00 to 20.50
No. 2 plain, N. J., tidewater	19.78 to 21.76
No. 2 foundry, east N. Y. fur.	18.00
No. 2 Alabama, Birmingham	16.00
No. 2 Alabama, del. Cincinnati	19.69
No. 2 Tenn., Birmingham base	16.00
No. 2 Tenn., del., Cincinnati	19.69
No. 2 Alabama, del. Chicago	22.01
No. 2 Ala., del. Chicago, river-rail	20.18
No. 2 Alabama, del. Cleveland	22.01
No. 2 Alabama, del. St. Louis	20.42
No. 2X, east. N. J., tidewater	19.78 to 22.26
No. 2X, eastern, del. Phila.	21.26
No. 2X, foundry, Buffalo furnace	17.50
No. 2X, eastern, del. Boston	23.15 to 23.65
No. 2X, Virginia furnace	20.50
Gray forge, val., del., Pittsburgh	18.76
Low phos., standard, valley	26.50
Low phos., standard, Phila.	24.76 to 27.29
Low phos. copper bearing fur.	23.00 to 23.50
Charcoal, Birmingham	28.00
Charcoal, Superior, del., Chicago	27.04

Silvery iron, Jackson county (Ohio) furnace in per cents: 5—$22; 6—$23; 7—$24; 8—$25; 9—$26; 10—$28; 11—$30; 12—$32; 13—$34.

Bessemer ferrosilicon, Jackson county (Ohio) furnace, in per cents: 10—$30; 11—$32; 12—$34; 13—$36 14—$38; 15—$40.50; 16—$43.

Cleveland, May 29.—A fair amount of activity is noted in the pig iron market, furnace interests at Cleveland having booked 36,000 tons, for prompt and third quarter shipment. While Cleveland furnaces usually quote $16.50 to $17, base, Cleveland, in nearby territory, an inquiry for 5000 to 6000 tons of malleable from Benton Harbor, Mich., again developed a quotation of $16, base, Cleveland. A South Bend, Ind., melter is in the market for 2000 tons of foundry iron. A few small sales are noted in Cleveland at $18, base, furnace.

Cincinnati, May 29.—A sale of 500 tons of malleable iron to a central Indiana manufacturer for third quarter is about the only order of size reported by local firms in the past week. Most agencies report numerous small orders. Prices are steady on all grades.

Chicago, May 29.—More tonnage inquiries for northern pig iron are coming out for third quarter, but no buying movement for that period has developed. Some of the important inquiry out a week ago has been closed and additional tonnage has been offered by buyers. Foundry operations in the Chicago territory and in Michigan continue spotty. Shipments from furnace stocks are keeping close to April, and it is indicated the month's deliveries will measure well with those of last month, when the 100,000-ton mark was topped. All sellers are now quoting $18, base, Chicago furnace. Four of the seven merchant stacks of the district are active. Those blowing are two Iroquois and one Federal furnace at South Chicago and the Zenith furnace at Duluth.

St. Louis, May 29.—Uncertainty relative to prices has had a tendency to hold down pig iron buying. One leading specialty maker has covered his requirements through third quarter. Sales reported during the past week fell slightly below 3000 tons. The St. Louis Gas & Coke Co. booked 2500 tons, mainly in small lots. Prices are unchanged.

Birmingham, Ala., May 29.—Pig iron orders are small, and not as numerous as a short time ago. Probable output for the next 30 days has been fairly well covered. The price appears steady at $16, base Birmingham. Consumers are carrying little stock, and surplus foundry iron at furnace yards is being reduced steadily but slowly.

Coke

Demand Is Restricted and Prices Continue Easy—Foundries Absorbing Less Fuel

BLAST furnaces are not in the market for coke, and foundries are taking less tonnage, due to the lower rate of the melt. Beehive heating coke has been sold as low as $2.15, while on standard furnace grades for delivery over nearly a year $3 is quoted. Spot sales of foundry fuel are restricted, the usual prices being $3.50 to $4.50. Wise county coke is down 25 cents for third quarter.

Pittsburgh, May 29.—While some beehive coke suitable for heating purposes is available as low as $2.15, better quality is quoted at $2.35 to $2.50. On standard furnace grades the usual quotation is $2.60. Some sales are noted as high as $2.75, made by middle interests, involving only a few carloads. Blast furnaces are not yet in the market. At least two gas producers still are negotiating, and have bought small quantities for second tests. They have received quotations of $3 for delivery until April 1, 1929. Foundries are taking less coke because of the lower rate of the melt. Specifications in some directions have been held up. Spot buying is more restricted. Prices of $3.50 to $4.50 are available. Some makers still quote $4.75. A second maker of premium brand reduced the prices 25 cents to $4.85 on May 25.

Production of coke in the Connellsville region for the week ended May 19 was 53,780 tons, compared with 58,080 tons the preceding week, according to the *Connellsville Courier*.

Boston, May 29.—Coke prices probably will remain unchanged June 1. Shipments are increasing. Contracting for last half foundry coke is moving along briskly, and it is believed 50 per cent of the foundries have signed up.

New York, May 29.—Many by-product coke contracts in this territory have been renewed through the second half during the past week at prices prevailing at time of shipment. The current price for New England by-product foundry coke continues $11.50, delivered, New England consuming points, while the current price on northern New Jersey by-product coke for the foundry trade is $8.30, ovens, or $9 to $9.40, delivered at Newark, N. J. Several makers of the high-grade Pennsylvania beehive foundry coke now are down to $4.85, Latrobe, equivalent to $8.56, delivered Newark. Ordinary beehive foundry coke for spot shipment ranges from $3.75 to $4.25 or $7.66 to $8.16, delivered Newark. By-product foundry coke from Fairmont, W. Va., is selling in this territory at $5.50 ovens, or $9.21, delivered Newark.

Cincinnati, May 29.—By-product coke prices for June will remain at the May schedule. Wise county beehive prices have been reduced 25 cents. Many foundries making automobile castings have reduced specifications, and a general slowing down in other directions being in progress.

Chicago, May 29.—Shipments of by-product foundry coke continue steady and are approximately up to those of a month ago. All ovens in the district are operating. Quotations are steady at $9, ovens, and $9.50 for local delivery.

St. Louis, May 29.—Coke demand reflects the usual seasonal slowing down. Shipments have been holding up fairly well. By-product interests report increasing stocks, though operations in some instances have been curtailed. Prices are steady.

Birmingham, Ala., May 29.—Foundries are requiring considerable coke, while furnace consumption is unchanged. By-product foundry coke is $4 to $5, base, Birmingham. Little beehive coke is being made.

Coke Prices

Beehive Ovens	
Prices per Net Ton	
Connellsville furnace	$2.60 to 3.00
Connellsville foundry	3.50 to 4.25
New River foundry	6.50 to 7.50
New River furnace	6.00
Wise county foundry	5.00 to 5.25
Wise county furnace	4.50 to 4.75
Alabama foundry	3.50 to 5.00
By-Product Foundry	
Newark, N. J., del.	9.00 to 9.40
Chicago, ovens	9.00
New England, del.	11.00
St. Louis	9.00
Birmingham	5.00
Indianapolis, Del.	8.75
Ashland, Ky.	7.00
Portsmouth, O.	7.00
Detroit, ovens	9.00
Buffalo, ovens	8.50 and 9.00

Ferroalloys

Users of Spiegeleisen Contracting for Second Half—Ferromanganese Active

New York, May 29.—Several important consumers have placed contracts covering their spiegeleisen requirements over the rest of the year. In addition there is a good spot demand. The price on spot carloads is $32, furnace, for the 19 to 21 per cent grade, scaling down to $30 for large tonnages. Further contracting has been done in ferromanganese for second half at the new price of $105, duty paid, tidewater. As these contracts embody a guarantee against declines there is no hesitancy from a price standpoint in getting under contract. Active specifications continue to be made against first half contracts at $100, duty paid, tidewater.

Tungsten ore is held at $11, duty paid, and up but users covered well before the market got quite so high. Shipments of special ferroalloys have let up somewhat, with lighter mill operations.

Pittsburgh, May 29.—Ferromanganese contracting for last half remains the feature of the ferroalloys market. This so far has been confined to the smaller users, larger ones feeling no need for haste. No interference has come in obtaining the new figure, $105, seaboard base. Specifications for June shipment on first-half contracts are coming along, although there is a slight letdown here and there in operating rates. Spiegeleisen shipments remain large, and some further contracting has been done for last half at $30 to $32 for the 19 to 21 per cent grade.

Chicago, May 29.—Smaller users of ferromanganese are contracting for last half. Sufficient business has been placed to establish the new price of $105, seaboard, or $112.56, delivered Chicago. Several spot sales are reported in spiegeleisen at $32, eastern furnace, for 19 to 21 per cent material on the basis of carloads. Differentials apply when tonnage business is offered.

Prof. W. E. Remmers, Washington university, St. Louis, has been elected chairman of the St. Louis chapter of the American Society for Steel Treating. Other officers selected are as follows: Vice chairman, J. E. Kilzer, assistant manager, Davis Boring Tool Co. division of Larkin Packer Co., St. Louis; and secretary-treasurer, Carl G. Werscheid, district manager, Colonial Steel Co., St. Louis.

Gas from the top of a furnace burdened on ferromanganese is 50 per cent higher in carbon monoxide than that from a stack making ordinary iron.

Ferroalloy Prices

Ferromanganese, 78 to 82 per cent, tidewater, duty paid	$105.00
Ferromanganese, del. Pittsburgh	109.79
Spiegeleisen, 19 to 21 per cent domestic furnace	32.00
*Ferrosilicon, 50 per cent, freight allowed, carloads	83.50
*Do., less carload	88.50
Do., 75 per cent	130.00 to 150.00
Ferrochrome, 66-70 chromium, 4-6 carbon, cts. per lb. con., del.	11.00
Do., for spot delivery	11.50
Ferrotungsten, stand., lb. cont.	95.00 to 98.00
Ferrovanadium, 30-40 per cent, per lb., contained, on analysis	3.15 to 3.65
Ferro-carbon-titanium, carload, producers plant, net ton	200.00
Ferrophosphorus, per ton, carload, 17 to 19 per cent, Rockdale, Tenn., basis (18 per cent)	91.00
Ferrophosphorus, electrolytic, per ton, carload, 23-25% f.o.b. Anniston, Ala. (24 per cent)	122.50

*These prices contract; spot $5 higher.

Scrap

Prices Sensitive in Most Districts, with Tendency Down at Chicago—New Business Scarce

HEAVY melting steel has been bought by a consumer at Chicago at $13.25, delivered, a decline of 25 cents. New business is scarce at Pittsburgh, and dealers are awaiting action on forthcoming railroad lists. A consumer at St. Louis has paid $12.50, delivered, for 10,000 tons of melting steel.

Chicago, May 29.—Weakness is developing in iron and steel scrap following about four weeks of steady prices. It is understood a leading consumer of heavy melting steel has purchased a round tonnage at $13.25, or 25 cents under the recent market. The range now is $12.75 to $13.25. Several railroads are offering large tonnages of scrap and this is having the usual sentimental weakness, although most of the western roads are inclined to offer material in smaller lots and in more frequent sales. The St. Paul sold 7000 to 8000 tons, most going outside the Chicago district. Both the Burlington and the Illinois Central have good sized tonnages to offer this week. Rerolling rails are strong, one purchaser having paid $15.50, or 50 cents above the recent market. Machine shop turnings are being sold off 25 cents. Consumers of cast borings are out of the market for the time being, making this grade unsteady.

Boston, May 29.—A generally easier situation in business and prices has developed in scrap. Mills have been cutting prices and this was reflected in local operations. Lower prices on machinery cast came as a result of foundry buyers checking their orders. Export demand for No.

Iron and Steel Scrap Prices

Corrected to Tuesday noon. Gross tons delivered to consumers, except Detroit where dealers' buying prices are shown

Steel Works Scrap

HEAVY MELTING STEEL

Birmingham	$10.25 to 10.50
Boston, dealers	8.50 to 9.00
Buffalo, No. 1	14.25 to 14.75
Buffalo, No. 2	12.50 to 13.00
Chicago	12.75 to 13.25
Cincinnati, deal.	11.25 to 11.75
Cleveland, No. 1	13.15 to 13.50
Cleveland, No. 2	12.50 to 12.75
Detroit, No. 1	11.00 to 11.25
Eastern Pa.	13.50 to 14.00
Eastern Pa., No. 2	11.00 to 11.50
Bethlehem delivery	13.50 to 14.00
N. Y., deal., R. R.	10.00 to 10.85
N. Y., deal., yd.	7.00 to 7.25
Pittsburgh, No. 1	14.50 to 15.00
St. Louis, No. 1	12.00 to 12.50
St. Louis, No. 2	11.00 to 11.50
Valleys, No. 1	14.25 to 14.75

COMPRESSED SHEETS

Buffalo	12.75 to 13.25
Chicago	11.25 to 11.75
Cleveland	12.50 to 12.75
Detroit	10.50 to 10.75
Pittsburgh	14.50 to 14.75
Valleys	14.00 to 14.50
E. Pa. new mat.	12.00 to 12.50

BUNDLED SHEETS

Buffalo	9.00 to 9.50
Cincinnati, deal.	9.50 to 10.00
Cleveland	11.50 to 12.00
Eastern Pa.	10.50
Pittsburgh	13.50 to 13.75
St. Louis	7.75 to 8.25

SHEET CLIPPINGS, LOOSE

Chicago	7.50 to 8.00
Cincinnati	8.75 to 9.25
Detroit	7.00 to 7.50
St. Louis	8.50 to 9.00

STEEL RAILS, SHORT

Birmingham	11.50 to 12.00
Boston	8.50 to 9.00
Buffalo	16.00 to 16.50
Chicago	15.50 to 16.00
Cincinnati, deal.	15.25 to 15.75
Detroit	11.00 to 11.50
St. Louis	15.50 to 16.00

STOVE PLATE

Birmingham	13.50 to 14.00
Boston, consumers	10.00
Buffalo	13.00 to 13.25
Chicago, net	11.50 to 12.00
Cinn., deal., net	8.00 to 8.50
Cleveland	12.00 to 12.50
Detroit, net	10.75 to 11.25
Eastern Pa.	11.50
N. Y., deal., mill.	7.50 to 8.00
Pittsburgh	11.50 to 12.00
St. Louis	12.00 to 12.50

SHOVELING STEEL

Chicago	12.75 to 13.25
Pittsburgh	10.50 to 10.75
St. Louis	11.25 to 11.75

KNUCKLES, COUPLERS SPRINGS

Buffalo	15.50 to 16.00
Chicago	14.50 to 15.00
Eastern Pa.	15.50 to 16.00
Pittsburgh	16.25 to 16.75
St. Louis	12.50 to 13.00

LOW PHOSPHORUS

Buffalo, billet and bloom crops	16.50 to 17.00
Cincinnati, deal.	12.25 to 13.25
Eastern Pa.	17.50 to 18.50
Pitts. billet and bloom crops	18.50 to 19.00
Cleve. billet and bloom crops	17.00 to 17.50

FROGS, SWITCHES, GUARDS

Chicago	14.00 to 14.50
St. Louis	12.50 to 13.00

ANGLE BARS—STEEL

Buffalo	14.00 to 14.50
Chicago	14.50 to 15.00
St. Louis	12.00 to 12.50

Iron Mill Scrap

RAILROAD WROUGHT

Birmingham	9.50 to 10.00
Boston, dealers	9.00 to 9.50
Buffalo, No. 1	12.00 to 12.50
Buffalo, No. 2	14.25 to 14.75
Chicago, No. 1	12.90 to 13.45
Chicago, No. 2	12.75 to 13.25
Cinn., No. 1 deal.	10.50 to 11.00
Eastern Pa.	15.00 to 15.50
N. Y., No. 1 deal.	11.00 to 11.50
Pittsburgh, No. 1	11.00 to 11.50
Pittsburgh, No. 2	14.50 to 15.00
St. Louis, No. 1	9.50 to 10.00
St. Louis, No. 2	11.75

WROUGHT PIPE

Boston, dealers	7.00 to 7.50
Eastern Pa.	12.00 to 12.50
Buffalo	12.00 to 12.50
New York, deal.	8.00 to 8.50

YARD WROUGHT

Boston	8.00 to 8.50
Eastern Pa.	14.50 to 15.00

BUSHELING

Buffalo	12.75 to 13.25
Chicago, No. 1	11.00 to 11.50
Chicago, No. 2	8.50 to 9.00
Cinn., No. 1 deal.	10.00 to 10.50
Cinn., No. 2	6.00 to 6.50
Cleveland, No. 2	9.25 to 9.50
Pittsburgh, No. 1	12.00 to 12.50
St. Louis, No. 1	9.50 to 10.00
Detroit, mixed	7.25 to 7.50

MACHINE SHOP TURNINGS

Birmingham	8.00 to 9.00
Boston	5.50 to 5.75
Buffalo	9.00 to 9.50
Chicago	6.75 to 7.25
Cincinnati, deal.	7.50 to 8.00
Cleveland	7.25 to 7.50
Detroit	6.00 to 6.50
Eastern Pa.	10.50
New York, deal.	6.25 to 7.35
Pittsburgh	9.75 to 10.25
St. Louis	7.00 to 7.50

MIXED BORINGS, TURNINGS
For blast furnace use

Boston, dealers	5.50 to 5.75
Buffalo	9.50 to 10.00
Cincinnati, deal.	8.00 to 8.50
Cleveland	9.25 to 9.50
Detroit	6.75 to 7.00
Eastern, Pa.	10.00 to 10.50
New York, deal.	6.75 to 7.35
Pittsburgh	10.50 to 10.75

CAST IRON BORINGS

Birmingham, chem.	13.00 to 13.50
Birmingham, plain	8.00 to 9.00
Boston, chem.	9.50 to 10.00
Boston, dealers	5.50 to 5.75
Buffalo	9.75 to 10.25
Chicago	9.00 to 9.50
Cincinnati, deal.	8.25 to 8.75
Cleveland	9.25 to 9.50
Detroit	6.75 to 7.00
Eastern Pa.	10.50 to 11.00
Eastern Pa., chem.	14.50 to 15.00
New York, deal.	6.75 to 7.35
Pittsburgh	10.75 to 11.00
St. Louis	8.75 to 9.25
Valleys	13.50

PIPES AND FLUES

Chicago, net	8.50 to 9.00
Cincinnati, deal.	7.00 to 7.50
St. Louis	9.00 to 9.50

RAILROAD GRATE BARS

Buffalo	11.25 to 11.75
Chicago, net	11.25 to 11.75
Eastern Pa.	11.50
New York, deal.	8.00 to 8.50
St. Louis	11.00 to 11.50

FORGE FLASHINGS

Boston, dealers	6.60 to 7.00
Buffalo	12.00 to 12.50
Chicago	9.50 to 10.00
Cleve., over 10 in.	11.75 to 12.25
Detroit	9.00 to 9.50
Pittsburgh	13.00 to 13.50

FORGE SCRAP

Boston, deal.	6.00 to 6.50
Chicago	15.50 to 16.00
Eastern Pa.	11.00 to 11.50

ARCH BARS AND TRANSOMS

Chicago, net	18.50 to 19.00
St. Louis	19.50 to 20.00

Iron, Steel Works Scrap

AXLE TURNINGS

Boston, deal.	6.75 to 7.00
Buffalo	12.50 to 13.00
Chicago	10.25 to 10.75
Cleveland	12.00 to 12.25
Eastern Pa.	12.00 to 12.50
Pittsburgh	13.00 to 13.50
St. Louis	9.50 to 10.00

STEEL CAR AXLES

Birmingham	17.00 to 17.50
Boston, ship. point	15.50 to 16.00
Buffalo	16.75 to 17.25
Chicago	17.90 to 18.50
Cleveland	16.00 to 16.50
Eastern Pa.	19.00 to 20.00
Pittsburgh	17.50 to 18.00
St. Louis	18.00 to 18.50

SHAFTING

Boston, ship. point	13.00 to 13.50
Chicago	17.35 to 17.90
Eastern Pa.	17.50 to 18.00
New York, deal.	14.00 to 14.50
St. Louis	16.50 to 17.00

Iron Foundry Scrap

CAR WHEELS

Birmingham, iron	12.00 to 12.50
Boston, con.	14.00 to 14.50
Buffalo, iron	12.75 to 13.25
Buffalo, steel	15.25 to 15.75
Chicago, iron	13.25 to 13.75
Chi., rolled steel	15.75 to 16.25
Cincinnati	12.00 to 12.50
Eastern Pa.	16.00
N. Y., iron, deal.	11.50 to 12.00
Pittsburgh, iron	14.50 to 15.00
Pittsburgh, steel	16.50 to 17.00
St. Louis, iron	13.00 to 13.50
St. Louis, steel	13.50 to 14.00

No. 1 CAST SCRAP

Birmingham, cup.	14.00 to 14.25
Boston	14.00 to 14.50
Boston, textile	13.25 to 13.50
Buffalo	14.50 to 15.00
Chicago, machiny.	15.95 to 16.50
Chicago, railroad.	14.30 to 14.85
Chicago, agri.	14.00 to 14.55
Cincinnati, mach. cupola, net deal.	14.50 to 15.00
Cleveland, cupola	15.50 to 16.50
Detroit, net	12.25 to 12.75
Eastern Pa. cupola	16.00 to 16.50
N. Y., cup., deal.	13.00 to 13.50
Pittsburgh, cupola	14.75
San Fran., del.	20.00 to 21.00
Seattle	14.50 to 15.00
St. Louis, railroad	13.00 to 13.50
St. Louis, agri.	13.00 to 13.50
St. Louis, machy.	13.00 to 13.50
Valleys	16.50 to 17.00

HEAVY CAST

Boston	10.50 to 11.00
Buffalo, breakable	11.50 to 12.00
Cleve., breakable	12.25 to 12.50
Detroit, auto., net	20.00 to 21.00
Detroit mach., net	12.75 to 13.25
Eastern Pa.	15.50
New York, deal.	11.50 to 12.00
Pittsburgh	12.75 to 13.00

MALLEABLE

Boston, railroad	13.00 to 13.50
Buffalo	15.00 to 15.50
Chicago, agri.	11.75 to 12.25
Chicago, railroad	13.00 to 13.50
Cinn., R. R., deal.	12.00 to 12.50
Cinn., agri., deal.	11.75 to 12.25
Cleveland, agri.	15.00 to 15.50
Cleveland, rail.	15.50 to 16.00
Detroit, auto	14.50 to 15.00
Pittsburgh, rail.	15.00 to 15.50
St. Louis, agri.	11.50 to 12.00
St. Louis, rail.	11.50 to 12.00

Miscellaneous Scrap

RAILS FOR ROLLING
5 feet and over

Birmingham	12.00 to 12.25
Boston, dealers	9.75 to 10.00
Buffalo	14.25 to 14.75
Chicago	15.00 to 15.50
Eastern Pa.	14.75 to 15.25
New York	11.00 to 11.50
Pittsburgh district	16.50 to 17.00
St. Louis	13.00 to 13.50

LOCOMOTIVE TIRES

Chicago, No. 1	13.50 to 14.00
Chicago, cut	15.50 to 16.00
St. Louis, No. 1	12.00 to 12.50

LOW PHOS. PUNCHINGS

Chicago	14.25 to 14.75
Pittsburgh	16.50 to 17.00

1 steel is about the only bright spot in the market, for which $9.50 to $10 is quoted, delivered on dock in Boston, One steamer is leaving for Danzig this week with about 4000 tons.

Buffalo, May 29.—Purchase of about 20,000 tons of heavy melting steel by Bethlehem Steel Co. for Lackawanna delivery has been completed or will be made within a day or two. The price paid will approximate $14.50 or possibly a trifle more for strictly No. 1 material. Delivery will cover several months.

New York, May 29.—Efforts of some scrap consumers to obtain concessions are meeting with considerable resistance, with a result there is little fresh consuming buying and the dealers market here is unchanged. Virtually all grades are moving slowly, this applying particularly to wrought materials.

Philadelphia, May 29.—Good business in scrap results from numerous small and moderate size transactions. The price tendency is somewhat easier.

Pittsburgh, May 29.—New orders for scrap from open-hearth furnace or electric furnace operators as well as foundry cupola operators are scarce. Dealers are long on the market in a few directions where consumption is holding up and hence dealer buying likewise is curtailed. The Westinghouse Electric & Mfg. Co.'s machine shop turnings, compressed sheets, etc., for June are understood to have been bid in by consumers direct. The trade now is focusing its attention upon railroad lists; until these are out of the way little open market buying will take place. Heavy melting steel is unchanged at $14.50 to $15. The Monessen, Pa., embargo was lifted last Tuesday and since that time dealers have been shipping at the rate of two carloads per day.

Cleveland, May 29.—Iron and steel scrap prices are unchanged in this market. Spot buying continues quiet and although consumption has not declined sharply, close regulation of shipment still is in effect. Dealers are experiencing little difficulty in obtaining all old material desired.

Cincinnati, May 29.—Sales of scrap by the Seaboard Air Line, Nickel Plate and the Virginian railroad the past week were at fair prices, considering the dullness of the general market. Some of the offerings were taken by local dealers and will be placed almost immediately. Some foundries are melting less.

St. Louis, May 29.—Scrap iron and steel, after a long period of uneventfulness, has been enlivened by the purchase of 10,000 tons of steel by a leading local mill interest, for delivery over the next two or three months, and the price is understood to be $12.50, f.o.b. consumers plant. Prices remain unchanged in all grades, but in steel the feeling is somewhat firmer, due to the sale mentioned. Relatively little material is coming in from the outside.

Birmingham, Ala., May 29.—Iron and steel scrap continues strictly a buyers' market. Supply is ample. Prices are easy, with many grades nominal. Heavy melting steel is being sold as low as $10.25, delivered.

Bolts, Nuts, Rivets

Buying Is Diversified but Volume in Most Districts Shrinks

NUT AND BOLT PRICES, PAGE 1432

Pittsburgh, May 29.—Although orders for nuts, bolts and rivets are not so numerous, buying still is diversified. Nothing more than this piecemeal buying is justified by the present consuming rates. Some single carloads occasionally are included. A spotty condition prevails wherein one day is good both as to incoming business and outgoing tonnage, while other days little will be going out and less coming in. Operations have slipped a notch, the general average being 60 to 65 per cent. Prices are firm, makers still obtaining 70 and 10 off on small rivets and 2.90c on large rivets.

Philadelphia, May 29.—Expectations are bolt and nut contracts will be renewed for the third quarter in a week or two with prices unchanged at 70 off for jobbers and large users and 60 off for the small trade.

Chicago, May 29.—Few carlot orders are reported in bolts, nuts and rivets, and specifications continue easier. Shipping orders are sufficient to keep operations at about 60 to 65 per cent. Spot business continues at the full quoted prices. Distributors are obtaining 3.00c, Chicago, on the basis of carload lots for structural rivets.

Babbitt Metal Declines

Washington, May 29.—Babbitt metal total apparent consumption in April was lower than March, department of commerce figures show. Monthly comparisons follow:

	Total apparent consumption	Sold by manufacturers	Consumption by producers
	(Figures given in pounds)		
1927			
April	4,812,045	3,862,005	950,040
Tot. (4 mos.)	21,330,334	16,886,363	4,443,971
May	4,945,705	3,975,104	970,601
June	4,854,653	4,024,810	829,843
July	4,604,786	3,162,325	1,442,161
August	5,496,659	4,488,895	1,007,764
September	4,792,367	4,116,525	675,842
October	5,115,598	3,860,239	1,255,359
November	4,505,954	3,320,205	1,185,749
December	4,465,787	3,169,493	1,296,294
Total, 1927	60,111,843	47,003,959	13,107,884
1928			
January	4,928,517	4,034,352	894,165
February	4,470,368	3,443,694	1,026,674
March	4,927,634	3,903,071	1,024,563
April	4,842,656	3,724,691	1,117,965
Tot. (4 mos.)	19,169,175	15,105,808	4,063,367

Semifinished

Larger Demand for Forging Billets—Some Sheet Bar Contracts Have Been Closed at $34

FORGE shops are becoming more active, as reflected in better specifications for billets. One shop has contracted with the Ford Motor Co. for its entire output for a year. Sheet bar prices are firm at $34, base, Pittsburgh, and while some contracts are reported to have been closed, users generally do not show much interest in third quarter requirements.

SEMIFINISHED STEEL PRICES, PAGE 1432

Pittsburgh, May 29.—Open market activity in semifinished steel is dwindling. A few sales of 4 x 4-inch rerolling billets, 50 or 100 tons at a time, occasionally are made at $33. Forging billets are selling spasmodically at a $5 differential above that price. Small orders are placed from time to time and specifications against contracts call for limited tonnages. While oil well tool manufacturers are less active, forge shops are doing better. One shop has received a contract from the Ford Motor Co. for forgings which will take its output for a full year. Rerolling billets as well as slabs are moving out fairly well against contracts to nearby users in the strip and blue annealed sheet business. Sheet bars are held firmly at $34 and some quiet contracting has been done without open market inquiries. Wire rods are held at $44 bunt some $42 rods still are being billed, the $44 price having applied only on a few carloads. Skelp is quiet at 1.85c to 1.90c with no open market negotiations.

New York, May 29.—A disposition is noted to withdraw prices on wire rods lower than $44, base, Pittsburgh, especially for third quarter business. There have been no tests after the third quarter, however, because no consumers have come into the market. On current business the market continues $42 to $44.

Philadelphia, May 29.—Several round lots of billets have been sold for spot shipment. Prices are unchanged.

Cleveland, May 29.—Good specifications continue to be received by the leading local merchant producer of semifinished steel, and 13 of its 14 open hearths still are in operation. No interest is noted in third quarter, and books are not yet opened. Prices are steady.

Chicago, May 29.—Operations of mills engaged in production of semifinished material show no decline. Specifications are active on contract obligations and new buying is at the rate of the past four months. Billets, 4 x 4-inch base, are reported steady.

Bars

Demand Increases at Chicago, Eastern Mills Taking Some Surplus Tonnage—Prices Steady

DEMAND for steel bars is especially strong in the Middle West. Unusually heavy orders at Chicago make it difficult for mills to keep up with shipping schedules, and some tonnage is being refused. Specifications are 25 to 30 per cent above the April rate. Eastern mills are taking some of the surplus business. In the market generally users are indicating need for prompt shipment.

BAR PRICES, PAGE 1431

Chicago, May 29.—Bar producers in this market frankly admit they are having trouble making deliveries, owing to unusual demand from miscellaneous metalworking industries, coupled with the buying by farm implement, road machinery, and automotive manufacturers. Deliveries have been extended through the middle of June, and mills are forced to refuse tonnage because of inability to accommodate rolling schedules. Backlogs are dwindling so far as forward tonnage is concerned but the spot trade is increasing its momentum. Demand will show little adverse effects from the inventory taking by farm implement lines the latter part of this week as stock floors are bare of material. Specifications for bars during the week were well up to weekly averages of this year and are estimated at 25 to 30 per cent above the similar period in April. Specific orders equal shipping orders, but forward buying is behind shipments. Automotive and parts schedules for June are up to May.

Mills are obtaining 2.00c, Chicago, for the general run of soft steel bar business, with eastern competition driving hard at prices on the fringe of Chicago freight rate territory and to the north, where boat shipments are coming in from mills on the lower Great Lakes.

Buffalo, May 29.—First quotations are being made on third quarter bar inquiry. Pittsburgh producers quote 1.90c, base, Pittsburgh, while Bethlehem offers bars at 2.00c, base Lackawanna, it is reported, with a possibility of doing 1.95c on desirable tonnage.

Philadelphia, May 29.—Some mills are quoting 1.90c, Pittsburgh, on steel bars for third quarter but so far no business has been placed. The current market is 1.85c, Pittsburgh.

Pittsburgh, May 29.—All orders for merchant steel bars are for quick shipment, users holding down inventories. Cold bar finishers are ordering out hot bars for actual orders they have on hand. These are receiving specifications regularly from Ford, Packard, Hupp and one or two other automobile companies, but tonnage from Dodge, Buick and numerous others has shrunk to small proportions. Hot bar producers are maintaining the 1.85c market figure firmly and at times obtain 1.90c on mixed carloads. Operations generally are 70 to 80 per cent. Refined iron bar demand is spasmodic. Prices show no weakness, starting at 2.75c.

Cleveland, May 29.—Steel bar bookings in May have fallen behind those of April for some makers, but for others the April rate has been maintained. Automotive demand leads in volume, but orders were well distributed. Consumers are slowing up less than usual for the early summer and their stocks are negligible. Little is heard concerning price, and 1.85c, Cleveland or Pittsburgh mill, governs most sales.

Business Papers Elect New Officers

Seventy publishers attended the fourth annual executive conference of the Associated Business Papers Inc., at Shawnee-on-Delaware, Pa., May 23-25, and discussed intimate problems of executive responsibility in the publishing of business papers. J. H. Bragdon, manager, Bragdon, Lord & Nagle, New York, presided at the conference.

Election of officers for the ensuing year was as follows: President, C. J. Stark, president, the Penton Publishing Co., Cleveland; vice president, C. A. Musselman, president, Chilton Class Journal Co., Philadelphia; treasurer, Edward H. Ahrens, president, Ahrens Publishing Co., New York. F. M. Feiker, New York, again is managing director and secretary.

The executive committee of the association includes the officers and Mr. Bragdon, Paul I. Aldrich, National Provisioner Inc., Chicago; L. B. Sherman, Simmons-Boardman Publishing Co., Chicago; Elbert E. Haight, Concrete Publishing Co., Chicago; H. T. Hunter, Maclean Publishing Co., Toronto, and James H. McGraw Jr., McGraw-Hill Publishing Co., New York.

Plates

Specifications at Chicago Increase—Releases Expected on Huge Gas Line Project

ACTIVITY in the plate market is restricted to miscellaneous orders for prompt shipment, and the volume is not large. Specifications at Chicago, however, are 35 to 40 per cent larger than a week ago. Releases are expected to be made soon on plates and other structural material needed for a Louisiana-Kansas City gas line, requiring 114,000 tons of steel, reported placed.

PLATE PRICES, PAGE 1431

Pittsburgh, May 29.—Plate mills report numerous orders for small tonnages. Some are unable to map out operating programs more than a week or 10 days ahead, but as orders come in the schedules are extended on a 60 to 70 per cent average basis. All buying is for immediate shipment. Fabricating shops necessarily have to carry larger stocks where they make up standard barges but some of the smaller shops have no material on hand. Extensive barge buying is scheduled for early summer. Car shops expect that during July or by August some large car orders will be released. Plates are 1.85c, but 1.90c is obtained occasionally.

New York, May 29.—Plate demand, while not as large in volume as the average during the first quarter, continues to show considerable vigor. Eastern prices are 1.95c to 2.00c, base, Coatesville, or 1.80c to 1.85c, base, Pittsburgh, depending on the point of delivery. Delivered prices at New York as a rule are 2.12½c to 2.17½c.

Philadelphia, May 29.—Plate demand is well maintained. Eastern mills are operating at 40 to 60 per cent.

Cleveland, May 29.—Plate needs come from diversified sources, but the aggregate of these small lots is not large. Shipyards are not buying. Boiler and tank makers are on light schedules. Road-machinery and steam-shovel interests are operating good. Plates are 1.85c, Pittsburgh.

Chicago, May 29.—It is understood releases will come soon for plates and other structural material for the gas line from Louisiana territory to Kansas City, requiring 114,000 tons of steel. The tonnage is said to have been placed with a western maker. Plate deliveries still are extended two to three weeks with specifications 35 to 40 per cent ahead of a week ago. Forward buying is light and is not keeping up to shipments. Oil tankage amounted to less than 1000 tons. About 500 tons of oil tank plates are on inquiry from the Pacific coast. The 2.00c, Chicago, plate price is

virtually untested as to forward business.

CONTRACTS PENDING

200 tons, one steel hull for mat barge, Federal engineers, Vicksburg, Mass., 120 x 50 x 90 feet; bids close June 5.

Plate Bookings Gain

Washington, May 29.—Bookings of fabricated steel plate in April rose from March, according to department of commerce statistics. Monthly comparisons follow:

	*Total	Oil storage tanks	Gas holders	Blast furnaces	Stacks and miscellaneous
1926					
(year)	513,913	175,367	47,524	14,406	196,849
1927					
April	47,347	18,019	9,450	420	15,069
Total, 4 mos...	198,251	89,471	19,913	2,451	59,545
May	37,883	10,855	2,524	364	20,865
June	28,811	7,402	2,263	1,026	15,192
July	35,326	17,199	1,034	537	14,274
Aug.	48,577	29,691	3,504	481	11,385
Sept.	38,662	15,421	2,254	873	14,576
Oct.	47,090	18,648	3,252	385	11,599
Nov.	27,341	8,920	978	422	10,794
Dec.	35,648	13,367	3,490	385	13,088
Total (year)..	497,697	210,974	39,212	6,924	171,318
1928					
Jan.	35,787	8,758	2,062	1,225	16,412
Feb.	49,820	25,532	3,679	143	*15,420
March ..	*45,505	24,596	1,897	699	*13,978
April	48,493	21,330	4,654	619	15,176
Total, 4 mos.	179,605	82,559	12,292	2,686	60,986

*Revised

Forging Plant Will Move

The Steel Improvement & Forge Co., 5003 Windsor avenue, Cleveland, is completing construction of a new plant at Addison road and Metta avenue, the same city, and is planning to take occupancy before July 1. The plant has been designed and built under the direction of President C. H. Smith and his engineers and incorporates a number of features based on long experience in the drop forging business. The building is of structural steel framework with metal siding and roofing.

The forging equipment will include 20 drop hammers giving a capacity of from 800 to 900 tons of bar stock per month for single shift operation. This is an increase of about one-third over the present plant which has a capacity of between 500 and 600 tons per month. Some of the old equipment will be rebuilt prior to installation in the new plant. New equipment to be installed will include a 6500-pound four-roll board drop hammer and a double-geared tie-rod press, both built by the Erie Foundry Co., Erie, Pa.

Phineas Lewinson has been appointed receiver of the A. J. Nipple & Pipe Cutting Co. Inc., 171 Mercer street, New York. Liabilities are about $18,000 and assets about $3500.

Pipe

Line Pipe Activity Includes Reported 25,000-Ton Letting—Cast Buying in Week Only Fair

LINE pipe orders of the week included a reported letting of 25,000 tons of 8-inch to an independent producer by the Texas Co. Middlemen offering seconds or rejected pipe are hampering efforts of mills to move line pipe. Merchant pipe demand from jobbers continues at a fair rate. Cast iron pipe during the week was only average. Cast prices continue firmer.

PIPE PRICES, PAGE 1432, 1464

Pittsburgh, May 29.—Pipemakers are receiving more numerous orders for standard full weight merchant pipe from their jobber customers, the latters' turnover being more rapid on account of a fairly well sustained building program. Orders of a few jobbers in May aggregated less than in April. Those that were low expect June to compensate. A few manufacturers are receiving more single carloads of casing than in several months past. Some oil well drillers are doing no more drilling than necessary to protect leases and in some parts only one well is drilled where they should be drilling 15. Larger operators have only eight strings of tools working where they should have at least 50. Both gas and oil line pipe orders are slim although the trade here understands that the Texas Co. has placed an order for 350 miles of 8-inch, or slightly in excess of 25,000 tons, with an independent producer. Efforts of the pipe producers to sell line pipe are hampered by the offers of middle interests who have bought up odd lots, as much as 100,000 feet at a time, of rejected pipe or seconds. These are offered at low prices per ton and buyers use the figures in endeavoring to obtain concessions from the pipe makers on first grade pipe.

New York, May 29.—Cast iron pipe demand is quiet. Prices are unchanged with firmness continuing more in evidence. Bids have been asked on 2917 tons for New Jersey.

Chicago, May 29.—Prices for the heavier sizes of cast iron water pipe are firm at $31 to $33, base, Birmingham. On 300 tons of 16-inch pipe for Chicago the low bid was $39.10, delivered, or about $31 base. National Cast Iron Pipe Co. has closed on 1000 tons of centrifugal pipe for St. Clair Shores, Mich. Contract business has fallen considerably below last year, due in part to the pushing of suburban and subdivision extensions ahead of building demand. Municipal inquiry is slow. Activity of contractors consists largely of laying pipe purchased earlier in the season.

Birmingham, Ala., May 29.—Shipments of cast iron pressure pipe are heavy. A few new lettings are reported and unfilled tonnage is being reduced slowly, even with shops operating around 80 per cent of capacity. Base price on 6-inch and over still is $31 to $33.

CONTRACTS PLACED

1000 tons, centrifugal pipe, for St. Clair Shores, Mich., to National Cast Iron Pipe Co.
300 tons, 16-inch pipe for Chicago; Glamorgan Pipe & Foundry Co., low at $39.10, delivered.
231 tons, 4 and 6-inch class B, improvement of San Diego avenue, San Diego, Calif., through David H. Dyan, pipe to unstated maker.
180 tons 30-inch pipe, Milwaukee, to United States Cast Iron Pipe & Foundry Co. at $48.50 per ton.
120 tons, Victory Chemical works plant, Nashville, Tenn., to Connors Steel Co.
100 tons, 6, 8 and 12-inch, offsets for Chicago; Alabama Pipe Co. low at $79.80, delivered.
Unstated tonnage, eleven miles, 6 to 10-inch centrifugal pipe for Wall county, New Jersey, awarded through unnamed general contractor, to United Startes Cast Iron Pipe & Foundry Co.

CONTRACTS PENDING

25,300 feet, 14-inch and 10,500 feet of 10-inch water pipe, Seneca Falls, N. Y.; bids in.
2917 tons, 4 to 16-inch class B pipe for Middlesex, N. J.; contractors' bids in June 1.
229 tons, 4 to 10-inch class B, Inglewood, Calif.; bids in.
149 tons, 14-inch class B, Puyallup, Wash.; bids in.
131 tons, 10 and 14-inch class B, sewer in Pacific Beach district, San Diego, Calif.; bids in.
127 tons, 4 and 6-inch class B, Redwood City, Calif.; bids in.

To Discuss Foreign Steel

New York, May 29.—A conference of building superintendents of five boroughs of New York is slated to be held shortly to adopt a policy concerning the use of foreign steel. At that time results of recent tests of foreign steel will be discussed. These tests were to be conducted first under the building department's direction and were taken on ten samples of imported beams and five of domestic manufacture. The foreign steel was produced by two French mills and domestic by one American mill. The samples are understood to have met tests satisfactorily. Foreign beams ranged from 4 to 10 inches in size.

Projectiles for piercing armor, rolls for cold mills, drawing dies and crushers usually are made of 2 per cent chromium steels to obtain a hard surface.

Tin Plate

Operations Continue Over 90 Per cent—Shipments are High

TIN PLATE PRICES, PAGE 1431

Pittsburgh, May 29.—Tin plate shipments still are high in keeping with operations which continue to average a little higher than 90 per cent. American Sheet & Tin Plate Co. usually averages in that neighborhood but some independents still are running practically full. Specifications are heavy from day to day from the various container manufacturers, both general line and packers' cans, and in some cases books have been opened informally for last half, the open market price of $5.25 still applying. All reports from packing centers are entirely favorable and barring unforeseen contingencies it is estimated that tin plate consumption this year will be 15 to 25 per cent greater than last.

German Warship Armor Scrap at Buffalo

Buffalo, May 29.—An unusual cargo of scrap has been received here direct from England, without breaking bulk. The cargo consisted of armor plate from the old German warship VON MOLTKE, sunk by the Germans at Scapa Flow after she had been taken over by the allies. The cargo was brought to Buffalo on the steamer SORALDOC, built in England for the Great Lakes grain trade. This was her maiden voyage.

Furniture Orders Drop

Washington, May 29.—New orders for steel furniture in April declined, department of commerce statistics show. Following are comparisons by months:

	Business Group		Shelving	
1926	Orders received	Shipments	Orders received	Shipments
Total	31,393,171	31,429,140	7,840,351	7,837,017
1927				
April	2,750,877	2,849,536	621,888	677,745
Total, 4 mos.	11,431,084	11,347,600	2,546,062	2,532,146
May	2,381,369	2,528,672	686,144	585,397
June	2,369,244	2,519,512	638,485	657,927
July	2,091,804	2,040,209	534,592	564,744
Aug.	2,381,889	2,474,854	592,353	604,107
Sept.	2,367,857	2,218,602	607,905	531,154
Oct.	2,410,552	2,379,557	551,259	619,293
Nov.	2,476,230	2,856,181	574,763	590,764
Dec.	2,850,314	2,740,602	619,276	577,910
Total	30,760,343	31,105,789	7,351,122	7,264,282
1928				
Jan.	3,248,165	2,712,663	768,748	680,264
Feb.	3,295,861	2,908,527	741,310	681,999
March	3,283,329	3,169,351	841,098	831,607
April..	2,915,344	3,065,637	740,658	716,104
Total, 4 mos.	12,742,699	11,856,178	3,091,814	2,909,974

Sulphate of iron recovered from waste pickling liquor is used extensively for polishing glass, paint manufacture and treating of water.

Sheets

Orders Mainly for Prompt Shipment—Volume Is Light—Prices Continue to Show Easy Trend

SHEET users are buying mainly for prompt needs, showing more inclination to keep down inventories. Price easiness persists, and is believed to be one of the underlying reasons for requests for prompt shipment. Some automotive interests are specifying larger tonnages, while others are reducing, in anticipation of new models. The movement of sheets continues good.

SHEET PRICES, PAGE 1431

Pittsburgh, May 29.—Prompt shipment orders continue to be a feature of the sheet market. These are sufficient to maintain operations at an average of 75 to 80 per cent. Consumers everywhere are limiting their inventories as much as possible and early delivery appears to be the greatest consideration. Full finished sheet orders and other grades used in automobile construction are fairly heavy from Ford, Hupp, Packard and one or two other companies, but from others, Dodge Bros. and Buick Motor Co. particularly, they have dwindled perceptibly. Full finished sheets are 4.00c. Metal furniture sheets are moving well. Car builders are buying practically nothing. Each order for galvanized sheets seems to occasion much competition, and while a jobber recently was quoted 3.55c by a West Virginia mill, the lowest figure obtained by consumers has been 3.60c. Some makers will not quote less than 3.65c on attractive tonnages and 3.75c on single carloads. Quotations on galvanized sheets used in building construction, particularly corrugated roofing and siding, are weak. Black sheets have sold at 2.85c and down to 2.70c has been done, although one maker last week obtained 2.90c and 2.10c on a mixed carload of black and blue annealed sheets, respectively. While prices of blue annealed sheets appear to be the best held of any, competitive levels down to 2.00c again have been encountered.

Buffalo, May 29.—Sheet shipments continue good, with mills booked two to four weeks ahead of production. Third quarter prices will be announced soon. Operations are holding up well.

New York, May 29.—Although sheet demand continues fair, prices are weak and several instances are noted where consumers have been impressed by this weakness to the extent of deferring purchases. The usual price on blue annealed sheets is 2.00c, base, Pittsburgh, with occasional small sales at 2.10c, while on attractive business 2.00c has been cut in a limited number of cases. Another feature is that the extra $2 on blue annealed sheets more than 40 inches wide is not being obtained in all cases. The galvanized sheet market as a rule is 3.55c to 3.60c, base, Pittsburgh, with attractive orders going at 3.50c. The black sheet market is 2.65c to 2.70c, base, Pittsburgh, with occasional sales at 2.60c.

Philadelphia, May 29.—While sheet demand is fair, eastern mills operating 65 to 75 per cent prices continue uncertain. On galvanized a price of 3.50c, to 3.60c, base, Pittsburgh appeared in the past week. Black shows more resistance, the usual range, 2.65c to 2.70c, with some at 2.60c. Blue annealed continues 2.00c to 2.10c, base, Pittsburgh. Two good inquiries for blue annealed now are pending.

Cleveland, May 29.—Buying of sheet steel continues to ease off and totals for May are not expected to equal those of April. Demands from automotive stampers and parts makers continue to constitute the bulk of current business. Building work such as for cornices, ventilating equipment, etc. has not been as heavy as expected this spring. Prices on black sheets seem fairly well stabilized at 2.75c, Pittsburgh, although 2.75c, valley is reported quoted occasionally. Blue annealed sheets are quoted 1.90c to 2.00c, Pittsburgh, and autobody 4.00c. Galvanized sheets, steady from mills at 3.60c to 3.65c, Pittsburgh, have been subjected to severe shading lately, several jobbers reporting quotations from warehouses on carloads of as low as 3.50c, valley, or 3.40c, Pittsburgh, $4 a ton below the open market mill price.

Chicago, May 29.—Only sheets used in manufacturing operations are in important demand. Backlogs of blue annealed sheets are about six weeks but galvanized and black sheets, moving largely to jobbers and other distributors, are quiet. Owing to the lengthened deliveries for blue annealed and the light demand for the other grades, rolling schedules are difficult to make up. Operations are 50 to 55 per cent. Prices seem to have touched bottom, particularly on galvanized. Mill quotations are 2.80c for No. 24 black; 3.75c for No. 24 galvanized; and 2.20c for No. 10 blue annealed.

St. Louis, May 29.—New sheet orders are small and mainly for immediate shipment. Demand from the general manufacturing trade has receded. Prices are unchanged.

Moses Taylor Is Dead

Mount Kisco, N. Y., May 29.—Moses Taylor, formerly chairman of the board of the Lackawanna Steel Co., Lackawanna, N. Y., died at his country home here, May 26. Mr. Taylor was 57 years old.

Structural Shapes

Large Awards Again Lacking in Week of Moderate Activity—Pending Tonnage Indicates Good Lettings for June

ACTIVITY in the structural steel market of the week was unmarked by any developments of unusual size. Awards and inquiries were of average tonnage, but the award total fell considerably behind the weekly average of the year to date.

Chicago continues to offer a large potential market with two projects alone having prospective steel needs of 125,000 tons. Several heavy inquiries also are active in the East. Specifications to mills by fabricators and manufacturers are normal, although in Chicago tonnage is ahead of a month ago.

Some talk of third quarter is bringing out the intention of producers to ask 1.90c, Pittsburgh, equivalents for contracting in that period.

STRUCTURAL SHAPE PRICES, PAGE 1431

New York, May 29.—Structural demand is moderate. Prices are unchanged. Inquiry is featured by a 9000-ton subway section. Bridgework is represented by several fair tonnages. Of all miscellaneous building in the metropolitan district, lofts are least active. Competition continues keen on fabricated and erected work.

Boston, May 29.—Calling of a strike among the structural steel workers in this city has developed a situation which necessarily has slowed down operations. The effect of the strike is not felt outside of Boston, where it is centered. Prices on steel shapes range from 1.80c, base, Pittsburgh, for large lots to 1.90c on small lots.

Philadelphia, May 29.—Structural steel demand is better in this territory. On account of recent heavy structural lettings eastern mills are operating 60 to 75 per cent of capacity. Prices are unchanged.

Pittsburgh, May 29.—Larger awards in structural shapes are delayed but numerous small ones are being placed. Mills are receiving fairly active specifications against contracts and are maintaining the firm 1.85c market. At times 1.90c is quoted and obtained on single mixed carloads of material and that figure, it is expected, will be quoted on third quarter contracts. Inquiries are not keeping up as expected for this season. One fabricator reports the last three weeks as dullest in many years and while another had more orders in May than in several months, the tonnage was less per order. One fabricator booked 125 tons all week.

Cleveland, May 29.—Lettings of fabricated structural steel in the past week included several attractive jobs, although the bulk of business is under seasonal expectations. Forest City Structural Steel Co. was awarded about 1600 tons of steel for the Lake Shore hotel. Plain material specifications are only fair, but all are priced 1.85c, Pittsburgh. No third quarter negotiations have been started.

Chicago, May 29.—Prospects for structural steel awards during the late summer and autumn indicate a building activity seldom surpassed in this territory. Two projects alone will require a total of more than 125,000 tons. Current awards are fairly numerous but most of them individually amount to less than 1000 tons. Specifications for plain structural material are ahead of a month ago, but little buying is reported for stock. Consequently, the quoted price of 2.00c, Chicago, for plain material is nominal. Competition of steel fabricators is unusually sharp, with the result that steel bids are cut on most jobs.

Awards Compared

	Tons
Awards this week	15,667
Awards last week	32,265
Awards two weeks ago	31,544
Awards this week in 1927	18,499
Average weekly awards, April	30,358
Average weekly awards, 1928	38,179
Total awards to date, 1927	777,187
Total awards to date, 1928	801,753

CONTRACTS PLACED

4000 tons, Starrett building, John street, New York, reported awarded unstated fabricator last week went to Hedden Iron Construction Co.

2000 tons, Glenn Holmes garage, Lake street, Chicago, to American Bridge Co.

1800 tons, Onondaga building, Syracuse, N. Y., to Taylor-Fichter Steel Construction Co.

1600 tons, 1200 tons, shapes, 300 tons joists, 100 tons miscellaneous steel members, all steel building, Lake Shore apartment hotel, Cleveland, to Forest City Structural Steel Co.

1350 tons, Casino, Asbury Park, N. J., to unstated fabricator.

900 tons, Boston & Maine railroad terminal, Boston, to Levering & Garrigues Co.

750 tons, bridge over Chicago river at Crawford avenue, Chicago, to unstated fabricator.

700 tons, monastary, Jamaica, Long Island, N. Y., to McClintic-Marshall Co.

685 tons, I-beams for Los Angeles, to unstated interest.

550 tons, Queets river bridge, Washington, reported awarded through McGuire & Blakesley, Great Falls, Mont., to Virginia Bridge & Iron Co.

520 tons, McIlvaine apartments, Atlantic City, N. J., to American Bridge Co.

500 tons, miscellaneous work including school in the east 200 tons; Ellwood City, Pa., hospital 100 tons; and Ambridge, Pa., garage 100 tons, to Guibert Steel Co.

500 tons, Detroit & Ironton railroad bridge, Delta, O., to American Bridge Co.

500 tons, Pennsylvania railroad bridges, to McClintic-Marshall Co.

400 tons, Nickel Plate railroad bridges, Cleveland, to McClintic-Marshall Co.

400 tons, building for Continental Can Co., Chicago, to McClintic-Marshall Co.

400 tons, Pennsylvania railroad bridges, to American Bridge Co.

350 tons, bridgework for Union Pacific railroad, to American Bridge Co.

300 tons, Norfolk & Western railroad bridges, to Virginia Bridge & Iron Co.

220 tons, miscellaneous bridges for Cleveland, Columbus, Cincinnati & St. Louis railroad, to American Bridge Co.

220 tons, eight bridges, Vermont, to McClintic-Marshall Co.

200 tons, two schools, Mt. Lebanon, Pa., to John Eichleay Jr. Co.

200 tons, bridgework for Chicago, Burlington & Quincy railroad, to American Bridge Co.

177 tons, building for Ohio Steel Foundry Co., Lima, O., through H. K. Ferguson Co., Cleveland, engineer, to Massillon Bridge & Structural Co.

135 tons, refrabricating old and fabricating new sections for Parcels Post building, St. Clair avenue, Cleveland, to Forest City Structural Steel Co.

110 tons, Science building, University of Southern California, Los Angeles, to unstated interest.

100 tons, hospital, Charleroi, Pa., to Charleroi Iron Works.

100 tons, bridges for Michigan state highway department, to Massillon Bridge & Structural Co.

100 tons, pump houses for International Petroleum Co., South America, to Jones & Laughlin Steel Corp.

Unstated tonnage, Savona bridge over Thompson river, British Columbia, to J. J. Coughland & Sons Ltd., Vancouver, B. C., steel to unstated interest.

CONTRACTS PENDING

9000 tons, subway section 2, route 109, New York; bids in June 15.

3000 tons, Union Carbide & Carbon Co. office building, Chicago.

2000 tons, bridgework in Illinois.

1000 tons, theater, Williamsburg section, Brooklyn, N. Y.

975 tons, bridge over sanitary district canal, Chicago.

800 tons, bridge at Wichita, Kans.; bids in.

600 tons, three buildings for Adelphi college, Garden City, Long Island, N. Y.

600 tons, Langdon hall, Harvard university, Cambridge, Mass.

600 tons, building for Pennsylvania Water & Power Co., Holtwood, Pa.

600 tons, Pennsylvania railroad warehouse, Philadelphia; general contract to Sinclair & Grigg.

500 tons, building for Southern New England Telephone Co., Stamford, Conn.

500 tons, municipal pumping station, Syracuse, N. Y.

470 tons, bridge over Umpqua river, Scottsburg, Oreg.; bids in.

400 tons, public service station, Joliet, Ill.

450 tons, Hyde Park State bank, Chicago.

400 tons, Farmers Savings & Trust building, Mansfield, O.

370 tons, Sewickley hospital, Pittsburgh.

300 tons, Pennsylvania railroad bridges.

250 tons, continuation school, Boston.

225 tons, 4-story Slote building, Mt. Vernon, N. Y.
200 tons, Horn & Hardart restaurant, Camden, N. J.
200 tons, 4-story business building, Broadway and Thirtieth street, New York.
140 tons, bridge at Kenmore, O.
100 tons, Queensbury hotel annex, Glen Falls, N. Y.
100 tons, Latonia theater, Oil City, Pa.; bids in.
Unstated tonnage, Cincinnati Union Terminal project, Cincinnati; Fellheimer & Wagner, New York, just retained as architects.

World Coal Output Sets Record in 1927

World production of coal of all grades in 1927 is estimated by the federal bureau of mines as 1,475,000,000 tons. Approximately 197,000,000 tons was lignite and 1,278,000,000 bituminous and anthracite. Lignite production, the largest on record, increased 53 per cent over 1913. Anthracite and bituminous coal also was at a record high, but increased only 5 per cent over 1913. The 1927 figure compares with 1,365,000,000 tons for 1926 and 1,372,000,000 tons for 1925.

The 1927 figures give the United States 471,556,000 tons of bituminous and lignite and 73,164,000 tons of anthracite, Great Britain 259,516,600 tons of all grades, Germany 153,597,600 tons of coal and 150,805,711 tons of lignite, France 51,779,300 tons of coal and 1,067,400 tons of lignite, and Belgium 27,573,550 tons of all grades.

Prepares Specifications for Fuel Oil

Uniform specifications for furnace and fuel oil have just been announced by the American Oil Burner association, 350 Madison avenue, New York. The American Petroleum institute and the American Society for Testing Materials co-operated in the work. It is said that one of the greatest variables in oil burner installations has been nonuniformity of oil. Burner manufacturers found it difficult to explain just what oil they wanted and oil refiners were in doubt as to the needs of the manufacturers.

The specifications apply to six types of oil, including light, medium and heavy grades of furnace oil used in domestic heating, and light, medium and heavy grades of fuel oil for industrial use. The requirements cover flash point, amount of water and sediment, distillation range, and viscosity.

The following officers have been chosen for the Golden Gate chapter of the American Society for Steel Treating: Chairman, Dr. W. J. Crook, Leland Stanford university, Stanford, Calif.; vice chairman, Clyde Williams, Columbia Steel Corp., San Francisco; and secretary-treasurer, H. E. Morse, Morse Laboratories, 954 Howard street, San Francisco.

Getting out iron ore and iron pyrites is the major operation of the Algerian mining industry, according to the department of commerce. Last year 2,028,782 metric tons of ore and 12,137 tons of pyrites were extracted.

Concrete Bars

Terminal Letting in Boston Features Awards — Work Heavy in Chicago District

AWARDING of 1650 tons for the Boston & Maine railroad terminal in Boston featured concrete reinforcing bar activity of the week. Other awards were mostly for small lots. Prospective work continues to indicate heavy awards during the next several months. Chicago sellers estimate 20,000 tons pending. Prices reflect no changes.

REINFORCING BAR PRICES, PAGE 1431

Chicago, May 29.—Rail steel reinforcing bar distributers have before them fully 10,000 tons of prospective work, and billet bar tonnage in sight is estimated at 8000 to 10,000 tons in major projects. Billet bar fabricators have been taking a steady volume of smaller jobs. For lots under a carload, billet bar sellers are obtaining 2.60c to 3.00c. For carloads and over the price is 2.30c. Billet bar warehouses are calling for steady shipments from the mills.

Buffalo, May 29.—More than 600 tons of new inquiry for welded mesh is listed this week for road projects in this vicinity which are about to be awarded. Contractors are covering mesh requirements briskly and shipments are heavy. There is a fair amount of reinforcing bar inquiry pending with early coverage of a large portion indicated.

Boston, May 29.—Contract for 1650 tons of reinforcing steel for the new terminal warehouse of the Boston & Maine railroad has been awarded to the Truscon Steel Co. Other work in the district has involved small tonnages. Prices are steady.

Pittsburgh, May 29.—About 475 tons of concrete bars required for the Brashear reservoir, Northside, Pittsburgh, has been ordered from the Carlem Engineering Co. This is the largest individual order for concrete bars in several weeks. Several 50 to 100-ton jobs are up and numerous expansion jobs will take from 1 to 10 tons. Concrete bars are 1.85c to 1.90c.

Cleveland, May 29.—Awarding of the general contract for the superstructures of several buildings for the Union Terminals group to Aronberg-Fried Co., New York, was the only development of importance in the concrete bar market of the week. A few small inquiries were brought before sellers. New billet bar prices continue 1.85c, Pittsburgh or Cleveland mill. Rail steel is quoted 1.75c, mill.

Awards Compared

	Tons
Awards this week	3,860
Awards last week	7,695
Awards two weeks ago	5.150
Awards this week in 1927	13,148
Average weekly awards, April	10,522
Average weekly awards, 1928	7,640
Total awards to date, 1927	118,385
Total awards to date, 1928	160,442

CONTRACTS PLACED

1650 tons, Boston & Maine railroad terminal, Boston, to Truscon Steel Co., through Turner Construction Co.
800 tons, sewer work on West Side, Chicago, to Truscon Steel Co.
475 tons, Brashear reservoir, Northside, Pittsburgh, to Carlem Engineering Co., through Bucannelly Construction Co., general contractor.
225 tons, loft building, 1022 Santee street, Los Angeles, to unstated interest.
200 tons, road work, Illinois, to Olney J. Dean & Co.
160 tons, Huguelet apartment, 63 East Walton place, Chicago, to unstated fabricator.
150 tons, state highway work, Jones Beach, Long Island, N. Y., to Concrete Steel Co., through Conners Bros., Long Beach, N. Y.
100 tons, Daily News building, Chicago, to Joseph T. Ryerson & Son Inc. in addition to previous awards to American System of Reinforcing.
100 tons, court house, Gary, Ind., to unstated fabricator.

CONTRACTS PENDING

1800 to 2000 tons, superstructures for medical arts, garage and mercantile buildings, Union Terminals group, Cleveland; general contract awarded Aronberg-Fried Co., New York.
275 tons, mesh, for Greece-Manitor Beach, N. Y., highway, Liberto & Cerullo, Depew, N. Y., low bidder.
200 tons, bridge at Kenmore, O.
200 to 300 tons, Clifford B. Connelly trade school, Pittsburgh; bars to be bought this week by J. G. Fullman Construction Co., general contractor.
200 tons, Sewickley valley hospital, Sewickley, Pa.; bids rejected.
165 tons, mesh, for Penfield highway, Monroe county, N. Y.; Peter Deperro, Buffalo, low bidder.
155 tons, piers for West Waterway bridge, Seattle; bids opened.
150 tons, mesh, for Portville-Olean, N. Y., highway, J. F. Morgan Co., Olean, low bidder.
125 tons, nurses' home, Chicago.
120 tons, bridge over Cache creek, Lake county, Calif.; bids in June 16.
102 tons, state school, Polk, Pa.; bids in.
100 tons, including 80 tons bars, bar joists, pans, etc., Warren state hospital, Warren, Pa.; bids in.
100 tons, building for Morris Harvey college, Barbersville, W. Va.; bids being taken.
100 tons, Y. W. C. A., Washington, Pa.; bids being taken.
100 tons, Deadman's Island dam, Pittsburgh; bids being taken.

Springfield Bronze Co., Springfield, Mass., manufacturer of bronze castings, is operating 16 hours a day.

Rails, Cars

Dullness Pervades Railroad Market—Equipment, Rail and Track Accessory Buying Inactive

SECONDARY rail buying will be necessary within several weeks to maintain 90 per cent operations in Chicago district rail mills. Some miscellaneous track material was placed during the week but buying generally was light. A few small car and locomotive inquiries remain open. Erie railroad is placing 33 coaches. Large car programs previously rumored show no signs of development.

RAILROAD TRACK PRICES, PAGE 1432

Chicago, May 29.—Rail mills, while continuing to operate at 90 per cent, see little tonnage in sight after the next 30 days unless the roads indicate a more definite inclination toward secondary buying of rails. A lot of 4000 tons of heavy section rails on inquiry from a Western carrier remains open and it is probable that an eastern mill may get part of this tonnage. Orders for both heavy and light rails are in small miscellaneous lots.

Mills closed on 1500 tons of angle bars and about 2000 to 2500 kegs of spikes and 4000 kegs of bolts, mostly in small lots. Track fastenings inquiry includes lots of a total of about 10,000 kegs of spikes and bolts, and also some tie plates and angle bars.

Mills in this district have on their books the bulk of the specifications on pending car orders. Definite orders have been received for practically all the steel for the Chicago, Milwaukee, St. Paul & Pacific order of nearly 5000 cars.

New York, May 29.—Car buying again is light, with orders for 33 coaches for the Erie and 100 tank cars for the Barrett Co. outstanding in the local market. Fresh inquiry is negligible. Locomotive demand also is slack.

Philadelphia, May 29.—Inquiry for light rails for third quarter is beginning to develop from anthracite coal mine operators. One inquiry calls for 500 tons.

Pittsburgh, May 29.—Light rail orders still remain much of a hand-to-mouth proposition. Single carload orders occasionally develop, but the trade is hopeful that by June 18 more business will develop when the snarl on lake port freight rates is untangled. This is expected to enable some mines now inoperative to start up which will necessitate trackage purchases.

Track accessory manufacturers on a 70 to 75 per cent average operating basis are working out of their backlogs, with nothing much to furnish replenishments. Order books are dwindling, new business being exceedingly limited. No inquiries are pending but specifications against contracts are coming in with no holdups. The trade reports all prices are firm on track material.

Robert W. Hunt was the first chemist to be employed in an iron and steel works laboratory in this country. He was engaged in this capacity in 1860 by the Cambria Iron Co., Johnstown, Pa.

CAR ORDERS PLACED

Barrett Co., 100 tank cars, to American Car & Foundry Co.

Chicago, Burlington & Quincy, 250 stock cars, to its own shops.

Chicago, South Shore & South Bend, ten suburban cars, reported awarded Standard Steel Car Co.

Southern Pacific, 53 miscellaneous cars, 25 coaches, to American Car & Foundry Co., five combination coaches, and six diners, to Pullman Car & Mfg. Corp., ten baggage cars, to Standard Steel Car Co., and six baggage-mail cars, to Bethlehem Steel Co.

Chicago, Rock Island & Pacific, five horse-express cars, to American Car & Foundry Co.

Erie, 25 steel suburban coaches, to Standard Steel Car Co. and five steel baggage and express and three steel baggage and mail cars, to Pullman Car & Mfg. Corp.

International Railways of Central America, 80 miscellaneous freight cars, including 50 gondolas, 24 flat cars and five tank cars, to Magor Car Corp.

LOCOMOTIVE ORDERS PLACED

American Rolling Mill Co., Ashland, Ky., division, three oil-electric locomotives, to be built jointly by American Locomotive Co., General Electric Co. and Ingersoll-Rand Co.

Indianapolis Union, switch engine, to Baldwin Locomotive Works.

CAR ORDERS PENDING

Missouri Pacific, one coach.

Southern Pacific, 600 miscellaneous freight cars, long pending, may go to company's shops.

LOCOMOTIVE ORDERS PENDING

Mississippi Central, one locomotive.

Ludlum Steel President To Use Airplane

New York, May 29.—Lieut. Gov. Edwin Corning announces that he plans to buy an airplane to travel between his residence and place of business at Albany, N. Y., and his summer home at Northeast Harbor, Me. The plane will be amphibian and will carry four passengers and a pilot. Lieut. Gov. Corning is president of the Ludlum Steel Co., Watervliet, N. Y.

Sees Wrought Iron Use Larger in Britain

"In my opinion there is likely to be a reversion for many purposes to the use of wrought iron and already the Institution of Gas Engineers, whose members are probably the largest users of service tubes in the country, have laid down in their recent standard specification that the material of which their tubes are to be made is wrought iron," said E. J. Fox, new president of the National Federation of Iron and Steel Manufacturers, of Great Britain, at the recent annual dinner of that organization.

Cement Sales Are Less

The Portland cement industry in April, 1928, produced 13,468,000 barrels, shipped 13,307,000 barrels from the mills, and had in stock at the end of the month 27,605,000 barrels, according to the United States bureau of mines, department of commerce. Production showed a decrease of 4.1 per cent and shipments a decrease of 7.3 per cent, compared with April, 1927. Portland cement stocks at the mills were 16.7 per cent higher than a year ago. Total production from January to April, 1928, inclusive, amounts to 42,256,000 barrels, compared with 41,133,000 barrels in the same period of 1927, and total shipments from January to April, 1928, inclusive, amounts to 36,546,000 barrels, compared with 38,149,000 barrels in the same period of 1927.

Unite Polish Steelworks

Centralization of the Polish iron and steel industry is believed furthered by a new Polish steel syndicate, reports Assistant Trade Commissioner Gilbert Redfern, Warsaw, to the department of commerce. The Oberschlesische Eisenbahn Bedarfs A.G., of Germany, has announced an amalgamation of the Friedenschutte Works, of the Baildon Foundry, the Ferrun Co. and the Graf Dalestrem Co., all of Upper Silesia, and said for the most part German-owned.

The new group, it is stated in Poland, will be the most powerful organization of its kind in that country, employing about 18,000 workmen and controlling, among other installations, iron ore and coal mines, foundries, rolling mills, coke ovens, factories for by-products, and electrical power plants.

Dollar Is Buying More

For the average American wage earner and persons of moderate means, the purchasing power of the dollar today is higher than in nearly five years, according to the National Industrial Conference board, New York. On the basis of living costs in March, today's dollar is worth 62.1 cents in comparison with the pre-war dollar of July, 1914. The lowest point in recent years was in July, 1920, when the dollar was worth only 48.9 cents.

The Market Section

Wire

Business Fair, Considering Season and Stocks—Nails Weak, May Be Stiffened Next Quarter

PITTSBURGH mills find orders, especially for nails scarce. Jobbers' stocks are turning over faster than expected, and reordering may be expedited. Worcester mills report export business fairly good. Chicago makers are held back by slack buying in the Northwest. On nails the range of $2.55 to $2.65, Pittsburgh, still governs, with talk of trying to hold $2.65 for third quarter.

WIRE PRICES, PAGE 1432

Chicago, May 29.—Western wire mill operations are continuing at 65 to 70 per cent, and business is fairly satisfactory considering seasonal influences. The price of 2.55c is holding for bright plain wire in most western territory, but it is understood 2.50c has been made in the Northwest. Wire nails continue weak, with few sales owing to the heavy stocks on dealers' floors. What sales are reported are usually at $2.60 to $2.65, Chicago or western mills, although it is understood that 5 cents under the minimum figure has been named.

Worcester, Mass., May 29.—Demand for wire and wire products is holding well in view of the rather heavy buying in the first quarter which apparently is working into consumption steadily. Prices hold firm at 2.65c, Worcester, for plain wire. New business is mostly placed in limited lots, but such orders are fairly numerous. There is little change in production schedules. Manufacturers' wire and specialties are in good demand and Rhode Island has bought a fair sized lot of fencing from a district mill. The total going into export is fairly large.

New York, May 29.—There appears to be a more pronounced attitude toward firmer nail prices for third quarter among the makers. Several mills say their minimum price for third quarter on nails will be $2,65, base, Pittsburgh. In the meantime, on current business, the range of prices continues $2.55 to $2.65. The market on wire for manufacturers' use continues $2.50, base, Pittsburgh. Demand for wire is good but for nails only fair.

Pittsburgh, May 29.—Orders for wire products, particularly nails, are scarce. Manufacturers' wire is moving actively into different consuming lines but nail shipments still are retarded by the fact that jobbers still have accumulations on hand. The turnover in this connection, however, is increasingly better and these replacements may be necessary sooner than first thought. Nail orders only occasionally carry the $2.65, base, figure, and it is becoming more apparent $2.55 has not entirely disappeared, especially where favorable extras are charged. Wire is firm at 2.50c, base. Wire mill operations are not much over 50 per cent.

The American Car & Foundry Co. plant at Depew, N. Y., which at one time employed as many as 5000 men, is being razed and the material sold as scrap. The plant has not been in operation for some time.

Strip Steel

Business, Considered Broadly, Holds Up—Prices Variable

STRIP PRICES, PAGE 1432

Pittsburgh, May 29.—While here and there a slight letdown is noticeable in strip buying, one or two important producers report specifications up to 1000 tons ahead of last month to the same date, and this applies to both hot and cold in usual proportions. Shipments for these companies are at least 400 or 500 tons ahead of last month for the same period. Business is diversified and includes some attractive automotive tonnage. Strip operations are 70 to 80 per cent. Some producers encounter more keenly competitive price conditions than others. Some for instance, do not have a pound of hot strip business at less than 1.90c—others have had to go lower. Some have taken narrow strip business at a minimum of 2.20c while others had to go to lower levels. Each order for hot strip appears to be considered on its individual merits, and net price often is considered instead of the base. On cold strip 3.00c to 3.15c (2.75c to 2.90c on 3 tons or more) continues unchanged.

Cleveland, May 29.—Demand for hot rolled strip steel is being maintained in sufficient volume that sales totals for May in some cases will exceed those of April. Prices are weak, but fairly stable at 1.75c to 1.90c, for 6 to 12-inch, and 1.90c to 2.00c on 3 to 6-inch. Less than 3-inch is being quoted 2.10c to 2.20c. Recently good releases have come through to this district from automotive interests. Cold finished strip steel is steady at 2.75c, with some 2.90c, being done on lots of 3 tons and over per size.

Chicago, May 29.—Hot rolled strip steel sales represent more diversified consumption, although the automotive industry is the main support. Hot and cold mills are operating 85 to 90 per cent. Bookings this week lengthened backlogs considerably, and most mills have orders entered that will occupy them three to four weeks. The price situation in both hot and cold rolled material is stronger. Hot rolled prices seem more stabilized as mills have considerable business booked at present quotations. These are 2.00c, Chicago, for 6 to 12-inch material; 2.20c for 3 to 6-inch; 2.30c for material under 3 inches; 2.10c blue annealed sheet basis, for 12 to 24-inch strips.

Cold Finished Steel

Attractive Auto Business Develops—Operate 70 to 75 Per Cent

COLD FINISHED PRICES, PAGE 1431

Pittsburgh, May 29.—While a slight falling off in specifications has been encountered by different cold bar finishers, this is not causing alarm or expectations of a precipitate disappearance. In fact, within the last 10 days some attractive automotive tonnage has developed. Automotive business, however, is considered spotty. Some automobile manufacturing units are operating at a high basis while others only are taking enough tonnage to balance up their stocks in preparation for new models. Producers claim they never have experienced a time when market prices were firmer, the basis being 2.20c. From 70 to 75 per cent is a fair estimate of operating rates.

Cleveland, May 29.—Buying of cold finished steel bars continues at a good rate from the screw machine products manufacturers, indirectly for automotive consumption. A few good agricultural equipment orders have been placed lately, although the bulk of this business for 1928 has been shipped. Steam shovel and roadbuilding equipment builders are taking fair quantities of cold drawn bars. Several instances have arisen lately of attempts by large consumers to break the 2.20c, Pittsburgh, 2.25c, Cleveland, market without success. Business being placed is found much more highly competitive by mills, but firmness of price is not questioned.

Postpone Hot Metal Fete

Cincinnati, May 29.—A slight accident to the blast furnace at Hamilton, O., has caused postponement of the formal celebration of the first transfer of hot metal from the furnace to the American Rolling Mill Co. at Middletown, O. The ceremony was scheduled for May 31, with many local notables and high railroad officials attending.

Tool Dealers Meet

Members of the Associated Machine Tool Dealers conducted their annual spring meeting at Granville, O., May 23-25. Intimate problems relating to the sales and servicing of machine tools were the chief tpoics of discussion. Considerable time was spent on the policy of trading in old tools in selling new.

Nonferrous Metals

Strength in Copper Features Metal Trade—Price Upturn on Red Metal Accompanied By Advance in Mill Product Quotations

Prices of the Week, Cents a Pound

	Copper—Electro delivered	Copper—Lake delivered	Copper—Casting refinery	Straits Tin—New York Spot	Straits Tin—New York March	Lead—New York	Lead—East St. Louis	Zinc—St. Louis	98-99% Aluminum	Spot Antimony	Ingot Nickel
May 23	14.62½	14.70	14.25	51.62½	50.87½	6.10	5.97½	6.12½	23.90	11.00	35.00
May 24	14.65	14.75	14.30	51.75	50.85	6.10	6.00	6.12½	23.90	10.87½	35.00
May 25	14.75	14.82½	14.30	51.50	50.82½	6.20	6.07½	6.12½	23.90	10.87½	35.00
May 28	14.75	14.87½	14.37½	51.12½	50.75	6.20	6.05	6.12½	23.90	10.75	35.00

NEW YORK, May 29.—Copper continues extremely strong and nearly all other metals are firm to strong. Good business was done the past week in copper and lead and some active days were experienced in the tin market. Zinc remained comparatively quiet, however. Nickel business was large and aluminum is moving at a fair rate.

Supplies of copper are in the tightest position in many years, with practically no metal available earlier than July, and with that month's supply now almost sold out. The price advanced from 14.50c to 14.75c, Connecticut, the past week and carried mill product prices up with it. In fact, copper wire went up ⅛-cent more than virgin metal. This increase brings wire back more nearly to the old differential of 2 cents over the price of copper.

Brass mill business has been good. Seamless tubing business has been unusually large so that the mills are carrying larger business on their books than in some years. Many kinds of tubing are in good demand but especially brass pipe for plumbing. Fair business is being done in brass rods and sheets. Copper sheet business this year has run into a larger tonnage than last year.

Copper—Strength in the market is due primarily to record breaking export business. Domestic business this year has not been in as large tonnage as last year, although lately it has been better than a few months ago. The increase in export business has been greater than the decrease in domestic business compared with last year. For this reason total shipments of copper are so large as to test producers' ability to ship.

Foreign and domestic users have had to enter the market in a large way at the same time, and both classes of users for early shipment. Not a great deal of copper has been bought for domestic shipment in August and little for export during that month. Most domestic business lately has been for July shipment and export for June and July. Where little early shipment metal now and then becomes available it can be sold at a premium. The export price has gone up to 15.00c, c.i.f., European ports.

Zinc—Prime western has sold only in a light tonnage during the past week, but most of this business has been for prompt or June shipment. Producers believe better buying is likely to be done soon. The ore market is firm and an important factor in making for strength in slab zinc. Other factors also help. For instance, individual producers are not being compelled to sacrifice metal for cash, although the stocks for the industry as a whole are large. Formation of a producing cartel in Europe helps the market in a sentimental way, although it does not mean any increase in export business. High grade metal is moving in a big tonnage at unchanged price.

Tin—This metal was active on two or three days the past week, and held at a remarkably steady price level. There appears to be more certainty that world output will continue large than that consumption will hold to its

(*Continued on Page* 1447)

Mill Products

Base prices cents per pound f.o.b. mill

SHEETS	
Yellow brass (high)	19.25
Copper, hot rolled	23.50
Lead, full sheets (cut ¼c more)	9.75
Zinc (100-pound base)	9.00
Aluminum, flat sheets, up to 10 gage, 3" to 72" wide	31.30
SEAMLESS TUBES	
Yellow brass (high)	24.12½
Copper	25.00
RODS	
Yellow brass (high, full turning)	17.00
Naval brass	19.75
WIRE	
Copper, car lots	16.37½
Yellow brass (high)	19.75

Old Metals

Dealers' buying prices, cents per pound

HEAVY RED BRASS	
New York	9.50
Chicago	10.00
Cleveland	10.00 to 10.25
HEAVY YELLOW BRASS	
Chicago	7.00 to 7.25
Cleveland	7.50 to 7.75
ZINC	
New York	3.50
Cleveland	3.25
HEAVY COPPER AND WIRE	
New York	12.00 to 12.25
Boston	11.75 to 12.25
Chicago	11.50
Cleveland	11.50 to 11.75
RED BRASS BORINGS	
New York	8.50 to 9.00
YELLOW BRASS TUBING	
Cleveland	7.50 to 7.75
LIGHT COPPER	
New York	10.50
Chicago	10.25
Cleveland	10.25 to 10.50
LIGHT BRASS	
Boston	5.75 to 6.00
Chicago	6.50 to 6.75
Cleveland	5.75 to 6.25
ALUMINUM	
Clippings, Cleveland	17.50
Borings, Cleveland	9.50
Cast, Cleveland	12.75
Cast, Boston	11.50 to 12.00

Secondary Metals

Remelt Aluminum No. 12	16.50 to 17.00
Brass ingot, 85-5-5-5	12.37½ to 12.62½

Coke By-Products

Benzol Strong, with Price Rise Possible—Naphthalene Less Active

New York, May 29.—Although most sellers are booked ahead until July, with demand brisk, prices on toluol are unchanged at 35 cents, works, for material in tanks and 40 cents in drums. Following recent advances in gasoline the benzol market is increasingly strong with an advance within the next 30 days predicted in some quarters. Solvent naphtha and commercial xylol continue quiet although steady, These products may be quoted at 30 cents, works, in tanks and 35 cents in drums.

Moderate buying for China features an otherwise listless market in sulphate of ammonia. Export prices range from $2.20 to $2.25, port, for material in double bags, with the inside figure the more commonly mentioned. Domestic buying is dull, with prices nominal at $2.20, delivered.

Naphthalene is less active as the cleaning season nears an end. Prices, while easier, are unchanged.

Coke Oven By-Products

Per Gallon at Producers' Plants in Tank Lots

	Spot	Contracts
Pure benzol	$0.22	.....
90 per cent benzol	0.22	.....
Toluol	0.35	.....
Solvent naphtha	0.30	.....
Commercial xylol	0.30	.....
Phenol	0.17	.....

Per Pound at Producers' Plants

Naphthalene flakes	0.05½ to 0.06½
Naphthalene balls	0.06½ to 0.07½

Per 100 Pounds Delivered

Sulphate of ammonia	$2.20

Warehouse

Tendency of Sales to Diminish Noted in Closing Days of May—Prices Remain Steady During Week—Building Materials Active

SALES from iron and steel warehouses tended to decline in the closing days of May, although activity early in the month will place the total equal to or better than April in many cases. Building materials continue active. The only price changes of the week were reductions in sheets at St. Louis.

While the individual orders coming to Boston warehouse interests recently have been limited, as a rule, they continue in such good volume that the weekly turnover has been quite satisfactory. Shading of prices on attractive business continues.

Buffalo warehouses report marked pickup in sales of finished steel during the past week. Total volume of sales in that period has been fully as large as that of any similar period this year with the entire line sharing in improved business. Buffalo warehouses are quoting a new price of 4.70c on 25 bundle lots of galvanized sheets although the former price of 5.05c prevails on smaller lots.

Although jobbing demand was less active at New York in the past week, demand was fairly good and most jobbers believe the month will not be far behind April. Prices generally are unchanged.

The price situation at Philadelphia on warehouse steel continues firm with price differentials well observed throughout Philadelphia and the surrounding territory. Jobbers report business fully equals the April rate and probably will show improvement when the final figures for May are in.

Cleveland warehouse demand is spotty. Some jobbers report good buying during the past week while others claim sales fell off. Sales totals for May generally will compare favorably with those of April. Building materials demand is good although not as heavy as expected for the season. Weakness in sheet prices seems confined largely to sales in carloads by jobbers, and consequently cannot be regarded as an essentially warehousing condition, inasmuch as few carload inquiries are coming before the local trade. Cold drawn bar demand from stock continues in fair quantity.

Warehousemen at St. Louis complain of continued dullness extending generally. Buying is cautious and conservative. Indications point to a better call for building materials during the next few weeks. Railroad shops, which are busy conditioning cars for handling the wheat movement, have been buying some fill-in repair materials, but in less than the usual seasonal volume.

Warehouse Quotations in Cents Per Pound at Leading Market Centers

STEEL BARS

Baltimore	3.10c
Boston	3.265c
Buffalo	3.30c
Chicago	3.00c
Cincinnati	3.30c
Cleveland	3.00c
Detroit	3.00c
Ft. Worth	3.75c
Houston	3.00c
Los Angeles	3.30c
New York† ††	3.20c to 3.25c
Philadelphia*	2.50c
Pittsburgh	2.90c
Portland	3.00c
San Francisco	3.15c
Seattle	3.00c
St. Louis	3.15c
St. Paul	3.25c
Tulsa	3.75c to 4.06c

IRON BARS

Baltimore	3.10c
Boston	3.265c
Buffalo	3.30c
Chicago	3.00c
Cincinnati	3.30c
Detroit	3.00c
Ft. Worth	3.75c
New York†	2.80c to 3.24c
Philadelphia*	2.50c
St. Louis	3.15c
Tulsa	3.75c to 4.06c

REINFORCING BARS

Baltimore	2.80c to 3.31c
Boston	3.265c to 3.50c
Buffalo	2.75c
Cincinnati	3.15c
Cleveland	2.20c
Detroit	3.00c
Ft. Worth	3.50c
Houston	3.00c
Los Angeles cl.	2.65c
Los Angeles lcl.	3.00c
New York	2.95c to 3.10c
Philadelphia	2.30c to 2.80c
Pittsburgh	2.75c to 3.175c
San Francisco cl.	2.85c
San Francisco lcl.	3.10c
Seattle	3.00c
St. Louis	3.15c
Tulsa	3.75c to 4.00c
Youngstown	2.30c to 2.60c

STRUCTURAL SHAPES

Baltimore	3.10c
Boston	3.365c
Buffalo	3.40c
Chicago	3.10c
Cincinnati	3.40c
Cleveland	3.00c
Detroit	3.10c
Ft. Worth	4.25c
Houston	3.25c
Los Angeles	3.30c
New York†	3.25c to 3.30c
Philadelphia	2.40c to 2.80c
Pittsburgh	3.00c
Portland	3.00c
San Francisco	3.15c
Seattle	3.00c
St. Louis	3.25c
St. Paul	3.35c
Tulsa	3.75c to 4.16c

PLATES

Baltimore	3.10c
Boston	3.365c
Buffalo	3.40c
Chicago	3.10c
Cincinnati	3.40c
Cleveland, ¼-in. and thicker	3.00c
Cleve., 3/16-in.	3.20c
Detroit	3.10c
Detroit, 3/16-in.	3.30c
Ft. Worth	4.00c
Houston	3.00c
Los Angeles	3.30c
New York†	3.25c to 3.30c
New York† (floor)	5.05c to 5.10c
Philadelphia	2.40c to 2.80c
Phila., 3/16-in.	2.60c to 3.00c
Pittsburgh	3.00c
Portland	3.00c
San Francisco	3.15c
Seattle	3.00c
St. Louis	3.25c
St. Paul	3.35c
Tulsa	3.75c to 4.16c

No. 10 BLUE ANNEALED

Baltimore	3.45c
Boston, 3/16-in.	3.915c
Buffalo	3.70c
Chicago, to 40 in.	3.50c
Chicago, over 40 in.	3.60c
Cincinnati	3.60c
Cleveland	3.25c
Detroit	3.50c
Ft. Worth	4.70c
Houston	3.90c
Los Angeles	4.00c
New York	3.90c
Portland	4.00c
Philadelphia*†	3.15c
Pittsburgh**	3.00c to 3.10c
San Francisco	3.75c
Seattle	4.00c
St. Louis	3.60c
St. Paul	3.75c
Tulsa	4.20c to 4.56c

No. 24 BLACK SHEETS

Baltimore	3.60c to 4.00c
Boston	5.00c
Buffalo	4.20c
Chicago	3.95c
Cincinnati	4.05c
Cleveland	3.75c
Detroit	4.10c
Ft. Worth	4.70c
Los Angeles	5.10c
New York	3.80c
Philadelphia*†	4.00c
Pittsburgh‡	3.65c
Portland	4.90c
San Francisco	4.95c
Seattle	5.00c
St. Louis	4.25c
St. Paul	3.95c
Tulsa	4.75c

No. 24 GALVANIZED SHEETS

Baltimore	4.30c to 4.75c
Boston	5.85c
Buffalo	4.70c to 5.05c
Chicago	4.80c
Cincinnati	4.90c
Cleveland	4.50c
Detroit	4.90c
Ft. Worth	5.75c
Houston	5.30c
Los Angeles	5.50c
New York	4.50c
Philadelphia*†	4.75c
Pittsburgh‡	4.40c to 4.50c
Portland	5.65c
San Francisco	5.50c
Seattle	5.75c
St. Louis	5.10c
St. Paul	4.90c
Tulsa	5.55c

BANDS

Baltimore	3.85c
Boston	4.015c to 5.00c
Buffalo	4.05c
Chicago	3.65c
Cincinnati	3.95c
Cleveland	3.65c
Detroit	3.65c
Ft. Worth	4.40c
Houston	3.65c
Los Angeles	4.15c
New York†	4.00c
Philadelphia*	3.25c
Pittsburgh	3.60c
Portland	4.00c
San Francisco	4.00c
Seattle	4.00c
St. Paul	3.90c
Tulsa	4.71c

HOOPS

Baltimore	4.00c
Boston	5.50c to 6.00c
Buffalo	4.05c
Chicago	4.15c
Cincinnati	4.40c
Cleveland	3.65c
Detroit	4.15c
New York†	4.50c
Philadelphia*	3.50c
Pittsburgh	4.50c
Seattle	5.00c
St. Paul	4.40c

COLD FINISHED STEEL

	Rounds, hexagons,	Flats, squares
Baltimore	3.35c	3.85c
Boston	3.45c	3.95c
Buffalo	3.95c	4.45c
Chicago	3.60c	4.10c
Cincinnati	3.85c	4.35c
Cleveland	3.65c	4.15c
Detroit	3.85c	4.35c
Los Angeles (a)	4.50c	.....
New York	3.40c	3.90c
Philadelphia*	3.35c	3.85c
Pittsburgh	3.60c	4.10c
Portland (a)	5.00c	.....
San Fran. (a)	4.25c	.....
Seattle (a)	5.00c	.....
St. Paul (a)	3.85c	.....
Tulsa	4.66c	5.16c

(a) Rounds only.

COLD ROLLED STRIP

Boston, 0.100-inch, 500 pound lots	5.30c
Buffalo	5.85c
Chicago (b)	6.10c
Cincinnati	7.15c
Cleveland (b)	5.95c
Detroit	5.80c
New York	5.15c
Philadelphia (c)	5.00c

(b) Net base, straightening, cutting, boxing 1 ton or more.
(c) Plus mill, size and quantity extras.

SWEDISH IRON AND STEEL

New York duty paid

Hollow drill steel	14.00c
Iron bars, rounds	6.25c

Flats and Squares

Baltimore, New York, Phila.	6.60c

*Plus quantity differentials. †Minus quantity differentials. ††Domestic bars. ‡10 to 24 bundles. **25 or more sheets. *†50 or more bundles.

Coast Orders Are Light

Steel Prices Hold Well Despite Light Lettings—Placing Material for Aqueducts—Bar Business Exceeds Year Ago

SAN FRANCISCO, May 26.—(*By Air Mail*)—Although prices on most steel products continue on a fairly firm basis, demand has fallen off during the past week and few large awards were reported. The most important project up for figures at present involves 1500 tons of reinforcing bars and 1500 tons of No. 14 gage blue annealed sheets for the Wildcat and Sequoia aqueducts in Oakland. It is expected the Lock-Joint Pipe Co., Ampere, N. J., general contractor, will place this material during the next week or ten days.

Pig Iron and Coke

Sales and inquiries both for foundry pig iron and coke were limited and involved small lots for prompt shipment only. Little or no improvement is noted in the rate of operations among the jobbing class of foundries. Prices are unchanged.

Coast Pig Iron Prices

Utah basic	$25.00 to 26.00
Utah foundry	25.00 to 26.00
*German	24.25
*Indian	24.00 to 25.00
*Dutch	24.50

*C.i.f. duty paid.

Bars, Plates and Shapes

Awards of concrete bars this week aggregated 336 tons, bringing the total for the year to 43,270 tons as compared with 23,124 tons for the corresponding period in 1927. The largest letting involved 225 tons for a loft building in Los Angeles, placed with an unnamed interest. New inquiries all called for lots of less than 100 tons. In the San Francisco district 2.00c or better continues quoted from time to time on out-of-stock material.

Plate bookings so far this year are 30,000 tons below the figure of last year and from present indications there is little in sight to make up this difference. Awards to date aggregate 14,056 tons, compared with 44,044 tons for the same period last year. In addition to the aqueduct tonnage, mentioned above, only two other inquiries of importance are out for figures. The Santa Fe and Western Pacific each are inquiring for a carfloat involving 700 tons. Prices are firm at 2.30c c.i.f.

Awards of structural material during the week were lighter than for any other week so far this year. Bookings totaled 795 tons, bringing the aggregate for the year to 60,151 tons as compared with 73,933 tons for the corresponding period in 1927. The difference in the total this year and last year is due to two large projects placed early last year, namely, the Los Angeles city hall requiring 11,000 tons and an addition to the Los Angeles museum calling for 3,000 tons. The largest award involved 685 tons of I-beams for Los Angeles, placed with an unnamed interest, Only one new inquiry came up during the week. Pending business, however, involves a fairly large total, more than 16,000 tons being up for figures. Prices are firm at 2.35c c.i.f.

Other Finished Material

New inquiries for cast iron pipe were limited to lots of less than 100 tons. Awards this week were confined to 231 tons for a street improvement job in San Diego placed with David H. Ryan. To date 36,279 tons has been booked as compared with 44,742 tons for the same period last year. Bids were opened this week on 299 tons for Inglewood, Calif., and on 127 tons for Redwood City, Calif. Bids were also received at Oceanside, Calif., for 1560 tons of 4 to 12-inch Class B pipe. Bids go in next week on 887 tons for Lovelock, Nev. Prices are somewhat firmer and $36 to $37 a ton delivered on 6 inch and larger is now being quoted. Little of interest transpired this week in the market for standard pipe and oil country goods.

Northwest Active

Markets Firmer, with Less Price Cutting—Alien Steel Imports Off

Seattle, May 24.—Inquiry for iron and steel products continues active. Recent awards have been in small tonnages and while considerable work is indicated, no definite large contracts are immediately pending.

Market conditions are quite firm and there is less complaint of price cutting than a year ago. Also importations of steel products are causing less uneasiness.

Competition of steel substitutes has scored heavily both here and in California in recent awards. The Tacoma pipe line, which involved 2100 tons of plates, went to concrete pipe although steel fabricators submitted low figures.

Eugene G. Grace, president of the Bethlehem Steel Corp., accompanied by a number of eastern officials, and J. J. Tynan, San Francisco, Pacific coast vice president, was in Seattle last week. No official announcement was made but it is known that plans concerning proposed ocean terminals here and at other Pacific coast ports were under consideration.

Charles Peter, managing director of the U. S. Development Corp., Salt Lake City, was here last week surveying the field with the idea of establishing a Pacific coast plant for the reduction of coal to by-products. Low temperature carbonization of the lignite and sub-bituminous coals of western Washington is planned.

Plans are being prepared by Architects Henry Bittman and J. L. McCauley for a five-story addition to the present county-city building at Seattle. Work will be prosecuted late in the summer. The estimated cost is $1,500,000.

Bars, Plates and Shapes

Prices are unchanged with bars and shapes at 2.35c and plates steady at 2.30c. Reinforcing material is holding firm at 2.20c following a long period of price cutting by local interests. Both local steel mills are operating steadily, the bulk of present orders consisting of carlots or less. However, the total of new business is better than normal. No large awards were made this week. Business pending includes 155 tons for the substructure of the Spokane street bridge and 300 tons for a school in West Seattle.

According to unconfirmed reports award of 550 tons of structurals involved in the Queets river bridge has been made by the general contractors to the Virginia Bridge & Iron Co. The Kettle Falls bridge job, 1125 tons, and a pulp mill at Astoria, Oreg., 750 tons, are pending, the latter not yet being definitely up for figures. Department of public works, Victoria, B. C., has awarded to J. J. Coughlan & Sons Ltd., Vancouver, B. C., the contract for the steel superstructure will be about $93,000.

Chicago Steel Rate Down to 90 Per Cent

Chicago, May 29.—Steelworks operations here are about 90 per cent, against a recent 93 to 95 per cent rate, Bar mills are going full and rail mill operations will continue at 90 per cent at least 30 days. Illinois Steel Co. has 20 of its 27 furnaces active. Wisconsin Steel Co. is operating its three furnaces at South Chicago, and Youngstown Sheet & Tube Co. has one of its two steelworks furnaces active at Indiana Harbor. Inland Steel Co. is operating all four of its furnaces, but it is expected this producer soon will start piling iron against the necessity of blowing out one of its furnaces for repairs and enlargement. Active steelworks furnaces number 28 out of a total of 36 in the district.

Eastern Steel Co. Tax Claim Settled

New York, May 29.—A settlement has been reached in the government's tax claim against the Eastern Steel Co., Pottsville, Pa. The government's claim was for $1,000,000 and the settlement provides that the government will accept $150,000 as full payment. The money has been deposited, the Pottsville chamber of commerce paying $50,000 of it to keep the industry going. The company continues in the hands of Edward L. Herndon, receiver.

Great Britain Importing More Machinery

Principal importers and distributors of American machinery in Great Britain state that 1927 proved a much better year than 1926 with respect to sales volume. According to the industrial machinery division of the department of commerce, Washington, these statements are borne out by the import statistics which show 101,639 tons of machinery of all kinds, valued at £15,901,428 imported in 1927, compared with 80,433 tons valued at £12,782,879 in 1926.

With respect to machine tools only, a similar increase in imports is to be noted. Imports of machine tools have risen from £770,738 in 1925 to £927,293 in 1926 and £1,180,370 in 1927. By the countries of origin, the imports were as follows:

	1926		1927	
	Tons	Value	Tons	Value
Germany	3,559	£ 267,253	3,510	£ 318,886
United States	3,760	590,200	3,275	744,449
Others	571	69,840	893	117,044
Total	7,890	£ 927,293	7,678	£1,180,370

Although the volume of imports from the United States approximated closely that from Germany, the average per ton value was enormously greater. This fact illustrates clearly the market situation whereby American tools, because of their high quality, find a ready market in competition with tools of other nationalities, despite the fact that the latter are considerably cheaper. The average value per ton of machine tools imported from the United States during 1927 was £227, as compared with only £90 for Germany and £131 for other countries.

April Coke Output Off

April production of by-product coke was 3,925,195 net tons and of beehive coke 377,000 tons, states the federal bureau of mines. This was a slight loss from the 4,064,940 tons of by-product and 449,000 tons of beehive coke made in March. In April by-product ovens consumed 5,640,000 tons of coal and beehive ovens 595,000 tons. In the four months ended with April output of by-product coke has totaled 15,610,404 and of beehive coke 1,592,000 tons, compared with 14,727,829 tons of by-product and 3,210,000 tons of beehive coke in the corresponding period of 1927.

Is Special Representative

Pittsburgh, May 29.—J. E. McLain, district manager of sales of Bethlehem Steel Co. in this city, has been appointed special representative with headquarters here. J. F. Kratzer, formerly with the sales department of the Bethlehem company at Bethlehem, Pa., has been named to succeed Mr. McLain as Pittsburgh district sales manager.

Auto Exports a Record in March

Record breaking activities of the American automotive industry in foreign markets were registered in March, says the automotive division, department of commerce. Aided by shipments of 40,181 passenger cars, a heretofore untouched total for any month, the value of automotive shipments during March totaled $49,954,163, an increase of $10,443,605 and $15,422,131 respectively, or 26.4 and 44.7 per cent compared with the corresponding months of 1927 and 1926.

Combined unit shipments of passenger cars and trucks numbered 115,986 during the first three months of 1928 and represented a gain of 17.9 per cent over the 98,941 total of the like period of 1927, and 40.6 per cent above the first quarter of 1926.

The new high total for passenger car shipments for any single month showed a gain of 15,067 units or 59.9 per cent over February of this year, and 10,195 units or 33.9 per cent against March of last year. Shipments of trucks advanced 26.9 and 10.8 per cent over the number exported in March of 1927 and February, 1928.

Suspends Export Rates

Washington, May 29.—The interstate commerce commission has suspended until Dec. 15 the operation of certain railroad schedules which propose to cancel the present export and coastwise rates on various iron and steel articles, in carloads, from Atlanta, Ga., to Mobile, Ala., and New Orleans, via lines in connection with the barge line of the Mississippi-Warrier service, and to apply in lieu thereof higher domestic rates.

Reeves Plant Is Busy

Birmingham, Ala., May 29.—The Birmingham plant of the Reeves Bros. Co., steel fabricator and tank builder, continues to operate on a night and day schedule.

Radiation Demand Good

Birmingham, Ala., May 29.—The Birmingham plant of the American Radiator Co. continues to operate full, except Sundays. Shipments equal production. The only let-up in sight is a one or two week period for repairs and vacations early in the second half.

Large Stack Is Planned

Plans now are nearing completion for the construction of the world's largest blast furnace to be located in the Pittsburgh district. The hearth will have a diameter of 26 feet and it is expected the stack will make in excess of 1000 tons a day. Contracts for the foundation, shell and stoves are expected to be awarded within a few weeks.

Nonferrous Metals Market Is Active

(*Continued from Page* 1444)

present high rate. Use in the past few months appears to have regained its balance with supplies, but this is the heaviest consuming period of the year for manufacturers who use large quantities of tin. Supposedly hidden supplies are a factor that tends to undermine market confidence. Producers still are making good profits at present prices and some of them as a result continue to push production.

Spot and nearby tin supplies in the New York market are held for the most part and for that reason have been commanding a premium. For many months users bought futures because they considered the prices low but at this practice has resulted in their taking in much tin at prices higher than the spot market at the time that the tin was received, they have quit buying so much future metal. As a result, market activity has been light and this has bothered sellers. If use should continue large and users continue the return to a hand-to-mouth buying policy, the market would again come back to the hands of sellers as it was in the strong market several years ago, in contrast with the buyers' market that has prevailed lately.

Lead—After an unusually long period of unchanged prices, lead went up 10 points last Friday, to 6.20c, New York, and 6.05c to 6.10c, East St. Louis. For several weeks buying has been moderate, but nearly every day some activity in early shipment metal was noted and a little buying ahead was done. Producers knew from their order books that buying would have to become more active soon and they held the prices against this expectation.

Aluminum—Shipments are of good size and prices are firm. The rise in copper and smaller import business in aluminum are making for more certainty and firmness in new metal. On the other hand, supplies of secondary metal have been of good size and this part of the market is easy. Whether the easiness in remelted aluminum will result in larger sales of this grade and smaller sales of new metal, so as to bother the whole market, remains to be seen.—*Daily Metal Trade.*

Building Two More Arc Welded Structures

Two new factory buildings, all the structural work of which will be arc welded, are now being erected by the General Electric Co. One of these will be an addition to the plant in Bridgeport, Conn., and the other will be located at the company's Pittsfield, Mass., plant. These mark a second step in the program, recently announced, of utilizing welding in the construction of new buildings.

The new building at Bridgeport is to be a small, single-story structure, 64 feet wide and 42 feet long. It will connect two existing buildings in which wire and cable are manufactured, thus making them into one. It will require about 16 tons of steel. The Pittsfield building will be a two-story structure of beam and column construction, about 40 feet wide by 280 feet long, and containing about 250 tons of steel. The building will be of steel frame, brick pilasters, base and cornice, and steel sash. Floors and roof will be of concrete. It will be used in the manufacture of molded products.

The trusses in the Bridgeport building are of 64-foot span and are unique in design, utilizing upper and lower chord sections each consisting of half of a rolled I-beam. This beam is split in half by the use of a torch and, because of the large amount of web left, the single-angle web members can be directly welded to the web of the chord members. Fabrication of the trusses and other complete members will be done by the American Bridge Co. in its Trenton, N. J., plant.

New Hand Cream Prevents Skin Irritations

The research laboratories of the General Electric Co. have developed a protective hand cream which is furnished as a safety measure to those men in the company plants whose hands and arms are exposed to oil, grease, dirt, varnish, paint and other causes of skin discoloration and irritation encountered in industrial processes. It is applied before beginning work and forms an invisible film which quickly dries and is not slippery. Subsequent washing in warm water quickly removes the film and with it the stains which otherwise fill the pores of the skin and are difficult to remove, and likely to cause infection. This cream has now been placed on the market by the merchandise department of the company at Bridgeport, Conn. It will be packed in tubes for individual use and also in one pound cans for industrial.

Equipment Companies Effect Merger

Chicago, May 29.—A consolidation has been effected between two rail motor car and track equipment interests, Mudge & Co., of this city, and Fairmont Railway Motors Inc., Fairmont, Minn. The merged company will take the name of Fairmont Co. Robert D. Sinclair, former head of Mudge & Co., will be president of the consolidated company. H. E. Wade, president of Fairmont, is now the chairman of the board of the new company.

West Virginia Malleable Wins Rate Case

Washington, May 29.—The rate on pig iron in carloads, from Ironton, O., to Point Pleasant, W. Va., has been found unreasonable by the interstate commerce commission in a decision in the case of the West Virginia Malleable Iron Corp. against the Norfolk & Western railroad. A reasonable rate has been prescribed.

Castings Output Off

Washington, May 29.—Production of malleable castings in April dropped from the March total, according to the department of commerce figures. Following are monthly comparisons:

	Total tons produced	Per cent of capacity	Total tons booked	†Monthly capacity
1926				
Total	715,384	54.7	607,949	1,307,889
1927				
April	59,225	55.8	56,326	106,163
Total (4 mos.)	234,469	55.4	218,956	423,166
May	57,655	54.1	49,482	106,473
June	58,972	55.3	46,178	106,736
July	48,202	43.9	45,782	104,287
August	51,394	48.6	42,515	105,717
September	45,210	43.3	37,912	104,401
October	46,765	46.	39,494	101,606
November	40,845	40.5	34,624	100,778
December	47,876	47.6	49,215	100,685
Total (year)	631,388	50.4	564,158	1,253,849
1928				
January	54,818	59.6	53,153	92,015
February	59,045	63.8	55,452	92,498
March	63,322	69.6	60,697	91,043
April	56,667	62.3	53,849	91,019
Total (4 mos.)	233,852	63.8	223,151	366,575

†Capacity during 1927 has been based on following formula: "Total number of units of molding floor space times average production per molder per day per unit of floor space, times number of actual working days per month." Beginning January, 1928: "Average monthly production for the best six consecutive months since Jan. 1, 1919, is to be taken as a practical monthly capacity."

Woodward Iron Co., Birmingham, Ala., has declared a quarterly dividend of $1 on its common stock.

Aluminum Tonnage in 1927 Shows Gain

New aluminum produced in the United States during 1927 was valued at $39,266,000, an increase of 4 per cent compared with 1926, according to a statement prepared by J. M. Hill, of the United States bureau of mines, department of commerce. The principal producing plant was that at Massena, N. Y., where approximately half the metal made in the United States was recovered. Other works at Niagara Falls, N. Y., Alcoa, Tenn., and Badin (Whitney), N. C.

Imports of aluminum metal, scrap, and alloys in 1927 were 4 per cent less in quantity than in 1926, and imports of hollow ware were 34 per cent less than in the previous year. Imports of plate, sheets, bars, etc., in 1927 increased 215 per cent in quantity and "other manufactures" of aluminum increased 232 per cent in value, as compared with imports of similar products in 1926.

Exports of aluminum ingots, scrap, and alloys in 1927 increased 501 per cent in quantity, and of plates, sheets, bars, etc., increased 56 per cent, as compared with 1926, but exports of tubes, moldings, castings, and other shapes decreased 28 per cent. The value of table, kitchen, and hospital utensils exported in 1927 increased 7 per cent, and that of "other aluminum manufactures" increased 58 per cent as compared with 1926.

Official Classification Rates Revised

Washington, May 29.—Interstate commerce commission has ruled as follows in its investigation of rates on iron and steel in official classification territory:

1. Proposed increased rates on iron and steel rods, in carloads, between points in official classification territory found not justified. Suspended schedules ordered canceled.

2. Rates on steel bars, in carloads, from Pittsburgh and Johnstown, Pa., Youngstown, O., and Buffalo and North Tonawanda, N. Y., to Pawtucket and Valley Falls, R. I., found unreasonable or otherwise unlawful. Findings in original report modified on further hearing.

3. Rates charged on rectangular and hexagonal steel rods, in carloads, from McDonald, O., to Pittsburgh, Carnegie and Economy, Pa., found inapplicable. Reparation awarded.

Go-Ro Water Heater Co., New Orleans, has changed its name to the Southern Heater Mfg. Co.

Industrial Men in the Day's News

A. J. Hazlett, Executive Head of Eastern Rolling Mill Co.

HIS rise in the iron and steel industry was from the sales end of the business to the position of chief executive, which path few others have followed.

FOLLOWING an eventful college career, he spent less than 18 years working to the top. He is now one of the youngest company heads in the country.

THE chief interest he has is his work, but when he finds time for recreation he spends it playing golf, his best-liked sport.

ADAM JAMES HAZLETT, recently elected president of the Eastern Rolling Mill Co., Baltimore, succeeding the late J. M. Jones, and at that time noted briefly in IRON TRADE REVIEW, is one of a comparatively small number of men who have risen from the sales end of the steel business to position of chief executive. Mr. Hazlett also is one of the youngest steel company executives in the country, and attained this distinction in less than 18 years after embarking on his business career.

Born at Butler, Pa., in 1889, Mr. Hazlett was educated in the schools of Aspinwall, Pa., and Pittsburgh and then went to Gettysburg college, Gettysburg, Pa. There he showed unusual versatility in undergraduate activities. He was captain of the freshman baseball team, played on his class football team, was manager of the varsity football team, was leader of the mandolin club and a member of Phi Kappa Psi fraternity.

Following his graduation in 1910 he became associated with the West Penn Steel Co., Brackenridge, Pa. He spent four years in the operating department and then was transferred to sales, eventually becoming district manager of sales for that company at Pittsburgh.

In 1919 Mr. Hazlett was invited by the late J. M. Jones to join the Eastern Rolling Mill Co., which Mr. Jones then was getting under way. Mr. Jones was regarded as one of the foremost sheet and tin plate men in the United States. He organized the Baltimore Tin Plate Co., sold it out to the Bethlehem Steel Co. and after managing the plant for some years, resigned from the Bethlehem organization. In organizing the Eastern Rolling Mill Co. to produce sheets, Mr. Jones selected Mr. Hazlett as manager of sales. Mr. Hazlett, however, was connected with the company long before it had anything to sell.

As manager of sales of the Rolling Mill company, Mr. Hazlett had a successful career and under all conditions was able to get enough business to operate the plant at a high percentage of capacity. Furthermore, increases in sales made it possible to increase the plant capacity along conservative lines. The likelihood of further expansion in the future caused the company to buy an adjoining site recently. An unusual feature of the Rolling Mill company's business is that its product—full-finished sheets—is sold largely to consumers at or near Detroit, so that the company is under the necessity of equalizing freight rates with mills more favorably located with reference to Detroit.

Mr. Hazlett resides at Baltimore and his chief interest is his work. In addition to being head of the Rolling Mill company, he is a director of the Union Trust Co., Baltimore. His principal recreation is found in playing golf. He attends the First Unitarian church, Baltimore, of which he is a member of the board of trustees.

Men of Industry

Personal News of a Business Character Pertaining to the Iron and Steel and Related Fields of Enterprise

LOUIS C. BIHLER, traffic manager of the Carnegie Steel Co., Pittsburgh, since 1904, has been made assistant to the president and general traffic manager. Mr. Bihler was born in Pittsburgh and educated there. He became associated with James Rees & Sons, engine builders,

L. C. BIHLER

in 1881 and later went with the railroad which is now the Erie. In 1888 he went with the St. Louis-Southwestern railroad and seven years later he became connected with the Carnegie company as assistant to the general freight agent. Later he was made assistant general freight agent, then assistant traffic manager and in 1904 appointed to the position he has just relinquished. In 1906 he was named eastern traffic manager of the Universal Portland Cement Co., a position he still retains.

William S. Guy, assistant traffic manager of the Carnegie company, has been named traffic manager, succeeding Mr. Bihler. Mr. Guy entered the employ of Carnegie Bros. & Co. in 1891. He progressed through the various positions, since that time. He was born at Enon Valley, Pa.

* * *

E. V. Oliver, formerly with the Acme Electric & Mfg. Co., Cleveland, is now manager of the Ferrel Brake & Mfg. Co., Cleveland.

* * *

W. C. Katker, vice president and assistant general manager of the Favorite Stove & Range Co., Piqua, O., and with the company for three years, has been elected president.

* * *

Fred I. Teal, resident manager of the pig iron department of M. A. Hanna & Co. at Cincinnati, has resigned and after June 1 will be affiliated with Eaton Rhodes & Co., also of Cincinnati.

* * *

A. N. Flora, formerly vice president of the Trumbull Steel Co., has been elected secretary of the Sheet Steel Trade Extension committee, succeeding C. H. Patterson, who has resigned.

* * *

Frank M. Small has been made director of safety and employment manager for the Hydraulic Pressed Steel plant, at Cleveland, of Truscon Steel Co., Youngstown, O. He had been formerly with the industrial commission of Ohio.

* * *

Leigh B. Block has been appointed purchasing agent of the Inland Steel Co., Chicago, succeeding J. E. Stafford, who has resigned after an affiliation of 16 years with the company. Mr. Block will be located at the Inland Harbor, Ind., plant.

* * *

Charles E. Tullar has been appointed manager of the patent department of the General Electric Co., Schenectady, N. Y., succeeding A. D. Lunt, who has died. Mr. Tullar has been assistant manager of the department since December, 1927.

* * *

Howard E. Handy, metallurgist for the Saco-Lowell Shops, Lowell, Mass., and secretary of the Boston chapter of the American Society for Steel Treating, has changed his headquarters from Lowell to Biddeford, Me., where the metallurgical laboratory of the company will be located.

* * *

E. Theodore Sproull, former commissioner of the Hot Rolled Strip Steel institute, has been elected secretary and treasurer of the National Association of Flat Rolled Steel Manufacturers, Cleveland, succeeding Walter E. Lower, who resigned recently.

* * *

Robert M. Dunlap, who for the past year has been western sales manager at Chicago for Holorib Inc., Cleve-

W. S. GUY

land, has been made general sales manager and for the present will maintain headquarters at Chicago. J. L. Stewart also has joined the Chicago office as district manager. Mr. Dunlap formerly was sales manager of the Federal Cement Tile Co., Chicago, and Mr. Stewart was sales engineer with the same concern.

* * *

J. H. Brillhart, formerly vice president of the Fort Worth Steel & Machinery Co., Fort Worth, Tex., has resigned from that position to organize the Fort Worth Structural Steel Co., of which he is president. Mr. Brillhart, a graduate of Lehigh university, Bethlehem, Pa., was chief engineer of the Guerber Engineering Co., Bethlehem, from 1906 to 1912. He was chief engineer and consulting engineer also for Mosher Mfg. Co., Dallas and Houston, Tex. He became vice president and manager of

(*Concluded on Page* 1454)

British Steel Demand Improves

Plate Specifications, However, Show Lack of Stimulus from Shipbuilding Industry—7000 Tons of Rails Booked for Shipment to Argentina—French and Belgian Markets in Stronger Position

European Headquarters,
IRON TRADE REVIEW,
Caxton House, Westminster, S. W.1

LONDON, May 29.—(*By Cable*)—Business in continental steel here is limited, as present prices are unattractive to British buyers. British steelmakers are receiving better specifications, except for plates which reflect the lack of shipping orders. Demand for galvanized sheets shows improvement, while the boom in the tin plate market continues. Bolckow, Vaughan & Co. have taken an order for 7000 tons of rails for Argentina. Bridge contracts also have been obtainable from India and Nigeria.

Pig iron sales have increased slightly, but the market in the Middlesbrough district is dull, and there is little Scotch business.

Market conditions in France and Belgium are satisfactory. Shipments of British pig iron into France are increasing, due to the stronger position of the French producers. Berlin reports some resistance against recent price increases, and the markets are uncertain.

British Hopeful Despite April Output Loss

BIRMINGHAM, Eng., May 18.—(*European Staff Service*)—The market has been heartened by some encouraging developments, although there are unfortunately some happenings which have rather discounted these. An inquiry from America for welded steel pipes aggregating over 100,000 tons caused genuine surprise but there are hopes some business will result. Rails to the amount of 18,000 tons for Canada and Manchuria have been placed with Scotch steelmakers. The Glasgow area has been in a bad way lately, to some extent owing to the lull in the new orders for ships.

Some big structural projects are pending. London is planning to spend about twelve millions in building a bridge over the Thames, and in carrying out an extensive scheme of electrification. Latterly, it has become the fashion to use steel towers for carrying the overhead lines, and some acceptable orders have been placed.

Sterling $4.88

The position on the whole, therefore, is rather more hopeful, but the monthly return for April is rather discouraging, and the steel output for the month reduced from 793,300 tons to 644,100 tons. It is more than probable that this reduction is due to the serious amount of roll-changing already referred to in this column. A few weeks ago structural engineers suggested the introduction of a selling cartel, so that contracts might be divided in a way that would reduce the costs of production, and increase output.

The suggestion, however, did not find acceptance, and the grievance has become very much worse since.

People who buy foreign steel have received another shock this week by advances in Continental material, covering nearly the whole range of production, and raising the price by anything from 3s ($.72) to 6s ($1.46). One Birmingham merchant protested that his quotation for bars was 7s 6d ($1.83) higher than the one previously received, but the Germans explain that they are having to pay more for coal, wages and transport. A wire was received from Brussels putting up No. 3 Belgian to £6

Current Iron and Steel Prices of Europe

Dollars at Rates of Exchange, May 25	*British* Gross Tons U. K. Ports		*French* Metric Tons Channel Ports		*Belgium and Luxemburg* Metric Tons Channel Ports		*German* Metric Tons Rotterdam or North Sea Port	
Export Prices f. o. b. Ship at Port of Dispatch—By Cable		£ s d		£ s d		£ s d		£ s d
PIG IRON								
Foundry No. 3, Silicon 2.50-3.00	$16.10	3 6 0*	$15.37	3 3 0	$15.37	3 3 0	$15.62	3 4 0
Basic	15.86	3 5 0	14.64	3 0 0	14.64	3 0 0	15.37	3 3 0
Basic-bessemer	16.84	3 9 0†	14.64	3 0 0	14.64	3 0 0	14.64	3 0 0
Hematite, Phosphorus 0.02-0.05	17.08	3 10 0	22.26	565*	.....	.....	17.08	3 10 0
SEMIFINISHED STEEL								
Billets	$28.67	5 17 6	$23.42	4 16 0	$23.42	4 16 0	$22.45	4 12 0
Wire rods	47.58	9 15 0	28.06	5 15 0	28.06	5 15 0	28.06	5 15 0
FINISHED STEEL								
Standard rails	$37.82	7 15 0	$31.11	6 7 6	$31.11	6 7 6	$31.11	6 7 6
Merchant bars	1.53c	7 0 0	1.27c	5 15 6	1.27c	5 15 6	1.27c	5 15 0
Structural shapes	1.61c	7 7 6	1.08c	4 18 6	1.08c	4 18 6	1.03c	4 14 0
Plates, ship, bridge and tank	1.77c	8 2 6	1.41c	6 8 0	1.41c	6 8 0	1.38c	6 5 0
Sheets, black, 24 gage	2.18c	10 0 0	2.35c	10 14 0	2.35c	10 14 0	2.18c	9 18 0
Sheets, galvanized, 24 gage, corrugated	2.89c	13 5 0	2.92c	13 5 0	2.92c	13 5 0	2.92c	13 5 0
Bands and strips	2.23c	10 5 0	1.50c	6 16 0	1.50c	6 16 0	1.38c	6 5 0
Plain wire, base	2.12c	9 15 0	1.54c	7 0 0	1.54c	7 0 0	1.60c	7 5 0
Galvanized wire, base	2.94c	13 10 0	1.98c	9 0 0	1.98c	9 0 0	2.04c	9 5 0
Wire nails, base	2.51c	11 10 0	1.62c	7 7 6	1.62c	7 7 6	1.87c	8 10 0
Tin plate, base box 108 pounds	$ 4.51	0 18 6	.....	.....	.....	.....	$ 6.83	1 8 0

*Francs

Domestic Prices at Works or Furnace—Last Reported			Francs		Francs		Marks	
Foundry No. 3 Pig Iron, Silicon 2.50—3.00	$16.10	3 6 0	$17.53	445(2)	$16.32	585	$18.68	78
Basic pig iron	15.86	3 5 0	18.91	480(1)	15.07	540	21.08	88
Furnace coke	3.17	0 13 0	5.91	150	5.16	185	5.15	21.50
Billets	28.67	5 17 6	21.87	555	24.41	875	28.02	117
Standard rails	1.74c	8 0 0	1.48c	820	1.43c	1,100	1.53c	140
Merchant bars	1.55c	7 2 6	1.22c	680	1.26c	970	1.49c	137
Shapes	1.72c	7 17 6	1.17c	650	1.17c	900	1.46c	134
Plates, ship, bridge and tank	1.88c	8 12 6‡	1.51c	840	1.47c	1,130	1.67c	153
Sheets, black, 24 gage	2.29c	10 10 0	2.74c	1,520	2.39c	1,840	2.40c	220
Sheets, galvanized 24 gage, corrugated	2.83c	13 0 0	3.42c	1,900	3.12c	2,400	3.82c	350
Plain wire	2.12c	9 15 0	1.71c	950	1.89c	1,450	2.34c	215
Bands and Strips	2.23c	10 5 0	1.39c	770	1.61c	1,235	1.72c	158

*Middlesbrough; †Scotch foundry iron; ‡delivered; (1) Basic-bessemer; (2) Longwy. British export furnace coke £0 13s 0d ($3.17) f. o. b. Ferromanganese £20 10s 0d ($100.04) delivered Atlantic seaboard, duty paid. German ferromanganese £15 0s 0d ($73.20) f. o. b.

The equivalent prices in American currency are in dollars per ton for pig iron, coke, semi-finished steel and rails; finished steel is quoted in cents per pound and tin plate in dollars per box. British quotations are for basic open-hearth steel; French, Belgian, Luxemburg, and German are for basic-bessemer steel.

10s ($31.72) and basic steel bars to £6 13s 6d ($32.57).

In regard to the former, during Belgium's heaviest export period, we had nut and bolt makers here buying in 2000-ton lots. But these buyers are now off the market. Slow deliveries militate against business with the Continent, even more than high prices. The most difficult item to obtain is angles, which cannot be delivered before September, and though a few exporters promise steel in June, July is a much more common period for general material.

The large reduction in the export of wire rods to this country has prohibited a lot of business, as these prices are still attractive to the wire makers. However, the diversion to British mills has increased the activity of the domestic rod makers especially in Sheffield.

Business in bar iron is rather slow, although the makers of best material are still finding a fair demand from engineers and shipbuilders. Prices of inferior material range between £9 2s 6d ($44.53) to £10 10s ($51.24), the better quality stuff, on the whole having the best market.

Some stringency has developed in scrap, mainly on account of the increased consumption for billet production, and the large export to such countries as Germany and Poland. This business is more profitable to merchants than sales to South Wales, where the buyers do not take kindly to new quotations of £3 7s 6d ($16.47) and generally refuse to pay more than £3 6s ($16.10). Increased scarcity is likely in the future.

German Production of Iron, Steel, Steady

Berlin, May 15.—(*European Staff Service*)—The output of pig iron in Germany in March was 1,170,476 metric tons, compared with the highest mark to date in January, 1,180,237 tons. The March output included 704,074 tons of basic bessemer, 253,583 tons of ferroalloys, 113,716 tons of foundry, 94,327 tons of hematite, 3238 tons of direct castings, and 1538 tons of gray forge pig iron.

March output of steel ingots and castings included 1,393,557 tons of steel ingots and 27,967 tons of castings. The ingot production was composed of 735,912 tons of basic open-hearth, 624,045 tons of basic bessemer, 16,717 tons of acid open-hearth, 12,381 tons of crucible and electric, 4477 tons of welding, and 25 tons of bessemer steel. The following table gives figures for the first three months of 1928 as compared with the monthly averages of the three preceding years and 1913, in metric tons:

Mon. ave.	Furnaces on 31st	Pig iron	Steel ingots and castings	Finished steel
*1913	.....	909,640	993,640	970,240
1925	† 83	848,060	1,016,210	853,840
1926	†109	803,625	1,028,470	856,340
1927	†116	1,091,875	1,358,780	1,069,930
1928				
Jan.	116	1,180,239	1,469,455	.....
Feb.	115	1,122,384	1,322,695	1,040,875
Mar.	113	1,170,476	1,421,524	1,145,070

*In present boundaries
†On last day of year.

Belgian Output High

Brussels, May 15.—(*European Staff Service*)—Production of iron and steel in Belgium in March continued at a high average.

March production of steel ingots and castings included 316,910 tons of steel ingots and 9570 tons of castings.

The following table gives figures for first three months of 1928 compared with the monthly averages of the three preceding years and 1913, in metric tons:

Mon. ave	Coke	Act. Furn.	Pig iron	Steel ingots and castings	Finished steel
1913	294,000	....	207,055	205,550	154,920
1925	342,645	....	211,875	212,380	151,215
1926	413,000	....	283,270	281,160	231,810
1927	448,880	....	312,620	309,040	255,185
1928					
Jan.	.....	55	314,580	315,650	277,870
Feb.	465,480	55	302,000	310,410	260,290
Mar.	495,330	55	326,720	326,480	277,070

German Exports Gain

Berlin, May 15.—(*European Staff Service*)—Exports of steel products from Germany, inclusive of scrap, in February were 369,197 metric tons compared with 349,147 tons in January. Exports of pig iron and ferroalloys were 21,579 metric tons, against 13,879 tons in January. Among the principal items exported were bars, shapes, hoops and bands, 85,134 tons; wire rod and wire, 35,012 tons; rails, sleepers, and track fastenings, 49,952 tons; semifinished steel, 39,602 tons; forged tubes, 25,596 tons; plates and sheets, black, 23,351 tons; and forgings, 17,782 tons.

Imports of pig iron and ferroalloys in February were 23,086 metric tons, compared with 27,493 tons in January, and imports of steel, including scrap, were 217,238 tons, against 234,899 tons in January. Among the principal items imported in February were 82,612 tons of bars, shapes, hoops and bands, 25,367 tons of semifinished steel, 11,087 tons of wire rod and wire, and 10,881 tons of railroad track material. Imports of scrap were 57,841 metric tons.

French Coke at Record

Paris, May 15.—(*European Staff Service*)—A new high mark was reached in production of furnace coke at French collieries in March. Imports of coke in March were 445,656 metric tons, against 411,455 tons in February, and exports totaled 15,324 tons and 23,119 tons respectively.

The countries of origin of the coke imports were: Germany, 330,713 tons; Belgium, 74,699 tons; Holland, 40,220 tons; the remainder from other countries. Exports went principally to Switzerland, 8054 tons, and Italy, 6097 tons. The following table gives coke figures for the first three months of 1928 compared with monthly averages of the three preceding years and 1913, in metric tons:

Mon. ave.	Production	Imports	Exports
1913	335,620	255,835	17,085
1925	255,410	416,880	39,440
1926	313,950	462,915	39,320
1927	339,015	395,580	33,430
1928			
Jan.	357,475	473,018	25,840
Feb.	343,186	411,455	23,119
Mar.	369,360	445,656	15,324

French Steel Buyers Waiting-Out Markets

Office of IRON TRADE REVIEW,
9 Rue de Londres

Paris, May 18.—(*European Staff Service*)—Following the elections, which have shown that the country generally approves of M. Poincare's policy, business in the French iron and steel market is satisfactory. The loan being launched in France is the first step toward legal stabilization of the currency, and it is anticipated that the loan will be successful owing to the atmosphere of confidence that now reigns in the country, and also because capital is abundant. Consumers of iron and steel now are assured of satisfactory business conditions, and they are not in a hurry to meet their future requirements. There is a general tendency to wait and see how prices will react to present conditions. Following the stabilization, it is probable that there will be some adjustments in wages and also in taxation, with the result that there still are some uncertain factors for the future. The tendency of the market is firm, but it is slightly less active than it has been during the past two or three months. The works generally are well provided with iron and steel, but occasionally some replacement orders come on the market.

Franc—3.93c

There is no change in the pig iron market. The members of the three comptoirs, the A-products union, the rail syndicate, and the wire rod syndicate, met this week. The results of the working of these syndicates were considered to be satisfactory, and only minor changes were made in the prices fixed for the various products. There appears to be some difficulty in the formation of a plate and sheet comptoir. Only one concern has remained outside the wire rod syndicate, i.e. Societe Metallurgique de Normandie. However, this concern has only recently started to produce wire rod, and it is hoped that eventually it will join the comptoir. The basis price for wire rod remains fixed at 775 francs ($30.20) Thionville parity for direct consumers. There is no change in the price of shapes and beams. Only a limited number of producers of basic bessemer semifinished steel are on the market, but there is plenty of open-hearth steel available, and this is partly due to the fact the automobile industry is not consuming its normal quota of steel. Merchant bars are sold at between 670 and 690 francs ($26.35 and $27.15) eastern works. There is little activity in the wire products department. Wire nails are quoted at between 1050 and 1100 francs ($41.25 and $43.25).

Japan May Produce All Its Pig Iron

Washington, May 29.—Material increase of Japan's production of pig iron is reported under consideration by Counsel J. W. Dallantine, Tokyo, in a report to the department of commerce. The projects to increase production are summarized briefly as follows: Installation of two 500-ton blast furnaces in the government steel works at Yawata and one 500-ton furnace in the Ansham works of the South Manchuria Railway Co., conversion of two of the three 100-ton furnaces in the Wanishi plant of the Japan Steel Works to furnaces of 200-ton capacity and one to 160-ton capacity; conversion of a 150-ton blast furnace in the Tsurumi plant of the Asano Dockyards to one of 300-tons capacity; and installation of a 200-ton furnace in the Kamaishi Iron Works.

Should these projects be carried through to completion a 700,000 ton increase in Japanese pig iron capacity will result, bringing the total to approximately 2,500,000 tons a year or practically sufficient to meet present requirements.

The success of the project, however, centers about the ability of the Japanese to secure adequate supplies of iron ore with which to operate both the existing furnaces and those projected, it is believed. Japan is, at present, importing pig iron from British India, Manchuria, and Korea.

Output of Ferroalloys in 1927 Shows Decrease

Shipments of ferroalloys of all classes in 1927 amounted to 646,749 gross tons, valued at $55,163,574, a decrease of 6 per cent in quantity and of 10 per cent in total value, according to the bureau of mines, Washington. Production of ferroalloys in 1927 was 709,649 gross tons, compared with 674,389 tons in 1926, an increase of 5 per cent.

Production of ferromanganese in 1927 was 294,991 gross tons, containing about 232,900 tons of metallic manganese, an average of about 78.95 per cent of manganese. In the production of ferromanganese in 1927 there were used 564,725 gross tons of foreign manganese ore, 25,298 tons of domestic manganese ore, 12,735 tons of iron ore and manganiferous iron ore, and 8570 tons of cinder, scale, and scrap. The quantity of domestic manganese ore used in the manufacture of ferromanganese in 1927 represented only 4.3 per cent of the manganese ore that was used. Production of spiegeleisen in 1927 was 100,314 gross tons, containing about 20,400 tons of metallic manganese, an average of about 20.34 per cent of manganese. Production of ferrotungsten in 1927 was 1278 gross tons, containing 2,226,174 pounds of metallic tungsten, an average of 77.74 per cent of tungsten. Production of ferrovanadium was 1543 gross tons.

Steel Castings Orders Up in April

Washington, May 29.—A slight drop was noted in bookings of commercial steel castings in April, according to department of commerce figures. Production also declined. Following are monthly comparisons:

	BOOKINGS		PRODUCTION	
Total	†Total net tons	Railway specialties	†Total net tons	Railway specialties
1926	1,035,778	404,945	1,135,955	427,016
1927				
April	81,044	32,279	94,677	39,189
Total, 4 mos.	373,547	161,775	373,514	149,780
May	72,744	28,946	86,942	35,236
June	90,898	39,455	87,767	34,596
July	74,246	31,011	79,726	32,576
Aug.	63,528	21,144	87,004	32,397
Sept.	52,351	18,396	70,024	25,618
Oct.	51,748	16,625	62,409	21,947
Nov.	62,683	27,639	58,997	19,146
Dec.	76,953	39,112	58,220	19,358
Total	918,698	384,103	964,603	370,654
1928				
Jan.	*91,072	41,276	*74,082	28,714
Feb.	*90,677	41,096	*87,388	37,719
March	*82,536	*30,992	*92,806	*38,448
April	81,835	32,722	83,795	32,540
Total 4 mos	346,120	146,086	338,006	137,421

†For tonnage of miscellaneous castings deduct Railway specialties from this total.
*Revised.

Rolls New Steel Section

Bethlehem Steel Co. has added to its line of wide-flanged structural shapes a series of 33-inch beams and girders. These are the deepest sections rolled in the United States.

The beams are available in four weights, ranging from 125 to 152 pounds per foot, and with section moduli respectively of from 394.3 to 478.4. The girders also are being rolled in four weights, of from 202 to 230 pounds per foot, and with section moduli respectively of from 676 to 778.

These sections are designed to afford the maximum strength per pound of metal. They have the same contour as other Bethlehem sections, and are rolled on Bethlehem's patented Grey mills. A catalog has been prepared, containing descriptive matter, and giving safe loads and other engineering data.

Cold rolling of iron, steel and brass was in general use about 1800.

Steel Casting Bureau To Do Research Work

The steel castings development bureau, organized for development and research work in connection with work in steel castings and maintaining headquarters in the Stock Exchange building, Philadelphia, recently met in Washington and spent a day in looking over the resources of the bureau of standards and its application to steel castings problems. Companies composing the bureau are the following: Atlantic Steel Casting Co., Chester, Pa.; Crucible Steel Casting Co., Lansdowne, Pa.; Deemer Steel Casting Co., Newcastle, Del.; Dodge Steel Co., Tacony, Pa.; Empire Steel Casting Co., Reading, Pa.; Eagan-Johnson Steel & Iron Co., Crum Lynne, Pa.; Pennsylvania Electro Steel Casting Co., Hamburg, Pa.; Riverside Steel Casting Co., Newark, N. J.; and Treadwell Engineering Co., Easton, Pa.

The bureau adopted the suggestion of Dr. H. W. Gillett, chief of the division of metallurgy, to appoint a research associate to work at the bureau of standards on steel casting problems. J. V. McCrae, under the instruction of George Batty, director of research for the steel castings development bureau, will take up these duties in Washington immediately. Results of work done will be published and it is expected that the results of the co-operation between the castings manufacturers and the government will be of benefit to the whole industry.

Discusses Importance of Cost Knowledge

How cost knowledge is growing in importance as a business asset, particularly in view of the changing economic trends resulting from volume output, was emphasized by Dr. A. E. Swanson, the Swanson, Ogilvie Co., Chicago, in addressing the general meeting of the Screw Machine Products association May 17 in the Great Northern hotel, Chicago. He declared cost finding is an excellent tool of business diagnosis and urged that business and industrial executives master the knowledge of costs.

At a round table discussion S. L. Davis, vice president and general manager, Morganmade Inc., and vice president of the association's eastern division, outlined the progress being made by the association in his district. Standard clauses, which should appear on the quotation form, were discussed and recommended.

Men of Industry

(*Concluded from Page* 1450)

the structural steel and tank departments of the Fort Worth Steel & Machinery Co. in 1922.

* * *

Paul G. Leoni, president of the Iron & Ore Corp. of America and vice president of William H. Muller & Co. Inc., New York, sailed for Europe May 26 for a stay of seven weeks.

* * *

Harold V. Engh has been elected president of the Inland Wire & Cable Co., Sycamore, Ill., succeeding Arthur B. Gochenour, who has resigned. Mr. Engh has been continuously engaged in the insulated wire manufacturing business for 18 years.

George E. Dutton is chairman of the board of the Inland company, Arthur A. Mueller is vice president and treasurer, L. R. Love is vice president and secretary and H. W. Armington is assistant secretary and treasurer.

* * *

Robert M. Bird has been named district manager in the New York office of the Midvale Co., Philadelphia, succeeding Ward A. Miller, whose recent connection with the Vanadium Corp. was announced in IRON TRADE REVIEW issue of May 3. Mr. Bird, a graduate of Lehigh university, became associated with the Bethlehem Steel Co. in 1902. He remained with that company until 1924, serving as superintendent of its heat treatment department, superintendent of the Lehigh mills, and as chief metallurgist and engineer of tests of the Bethlehem plants. He became interested in the business of his stepfather, George F. Pettinos, in 1924, as production and operating manager of sand operations along Atlantic seaboard. He is a member of various organizations and in 1926 was president of the American Society for Steel Treating.

* * *

R. F. Johnson, formerly sales manager of the Alemite Die Casting & Mfg. Co., Chicago, who recently has been appointed sales manager of the Newton Die Casting Co., New Haven, Conn., has been connected with the die casting business in the Middle West for nearly eight years. He received his technical training at Chicago after which he joined the employ of the American Shop Equipment Co., Chicago, a subsidiary of the American Brake Shoe & Foundry Co. He remained with this company for five years in various capacities, at one time being chief draftsman and for two years in the sales department. During the war he served as ensign in the navy and in 1919 became associated with the Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa. In 1921 he joined the Alemite Die Casting & Mfg. Co., to take charge of sales in the outside territory. Two years later he was put in charge of the entire sales department and at the time of his leaving to take his present position he was in charge of sales, engineering and cost departments.

* * *

D. W. Wilson has been elected vice president and general manager of the Dry Quenching Equipment Corp., subsidiary of International Combustion Engineering Corp., New York. Mr. Wilson has been associated with coke oven and gas industries for many years, and has been active in the work of the carbonization committee of the American Gas association. His previous connections include Wilputte Coke Oven Corp., New York, and Iroquois Gas Corp.

D. W. WILSON

* * *

W. M. Corse, consulting metallurgist, Washington, and secretary of the institute of metals division of the American Institute of Mining and Metallurgical Engineers, attended the meetings of the Institute of Metals of Great Britain in London the week of May 8. He visited France, England, Sweden and Norway while abroad, and addressed the Society of Scientific and Industrial Research at Stockholm, Sweden, on industrial research in the United States.

* * *

Ezra E. Shull, who has been superintendent of the Horton Steel Co. at Bridgeburg, Ont., for the past 15 years has resigned.

Obituaries

JAMES S. LLEWELLYN, 40, first vice president, Chicago Malleable Castings Co., Chicago, died May 27. He was a graduate of the University of Michigan, Ann Arbor, Mich., and became secretary of the Malleable Castings company in 1907. He was elected vice president in 1925.

* * *

E. W. Sturtevant, 47, head of Hodgart & Co., Chicago, died in that city May 25. His company was western representative for Dean Hill Pump Co., Dean Bros. Electric Dynamo Co., Northern Pump Co., and Foos Gas Engine Co.

* * *

Norman A. Robertson, 57, president of the John Robertson Co., Brooklyn, N. Y., died May 25.

* * *

G. S. Cook has been elected president of the C. Lee Cook Mfg. Co. Inc., Louisville, Ky., succeeding C. Lee Cook, whose death was announced in IRON TRADE REVIEW, issue of May 17.

* * *

Charles G. Washburn, founder of the Wire Goods Co., now the Washburn Co., and one of the developers of the Washburn & Moen Co., now the Worcester, Mass., works of the American Steel & Wire Co., died at Lenox, Mass., May 25, aged 71 years.

* * *

Niels M. Peterson, 77, former resident of Steubenville, O., when he was superintendent of the Carnegie Steel Co. plants at Mingo Junction, Steubenville and Bellaire, O., died May 21 at Columbus, O. He had resided in that city for several years. Before he located in Steubenville, Mr. Peterson resided in Wheeling, where he was associated with steel mills. At the time of his death he was vice president and a director of the Columbus Blank Book Mfg. Co.

* * *

Arthur Dwight Dana, organizer and former president of the Chicago Fuse Mfg. Co. died May 25 at New York, after a long illness. Born in Marietta, O., 67 years ago, Mr. Dana was educated at Marietta college, following which he became treasurer of the Link-Belt Machinery Co., Chicago. He terminated that connection in 1896 to form the Chicago Fuse Mfg. Co. He formerly was associated with the Moore Drop Forging Co., Springfield, Mass.

Here and There in Industry

Timely Information Which Records Developments in Various Lines of Productive Enterprise

FORT WORTH STEEL & MACHINERY CO., Fort Worth, Tex., will continue its machine shop and sheet metal activities under that name and by direction of C. R. McCray, but the structural steel and tank departments of the company have been taken over by lease by the Fort Worth Structural Steel Co. The latter company has been organized by J. H. Brillhart, formerly vice president of the Fort Worth Steel & Machinery Co. Officers of the Fort Worth Structural Steel Co. are: President, J. H. Brillhart; vice president, C. H. Brillhart; treasurer, C. A. Fischer; and secretary, G. A. Brightwell.

* * *

EASY-ON CAP CO., Cleveland, recently bought the Bayonet Spring & Coupling Co., and is rearranging its warehouse for increased business.

* * *

A P. SCHRANER & CO., Payne avenue and East Thirty-third street, Cleveland, is shipping a honing machine to Citroen & Co., Paris, France.

* * *

COLUMBIA PATTERN & MFG. CO., Cleveland, in addition to making wood and metal patterns, is now also manufacturing a tire rim spreader and a nickel steel wheel puller.

* * *

SUPERIOR GAS ENGINE CO., Springfield, O., and National Supply Co., Delaware, O., have merged. P. J. Shouvlin, president of the former company, will head the merger.

* * *

CENTRAL PATTERN WORKS, 1186 East Seventy-first street, Cleveland, has begun the manufacture of plumbing and metal specialties. It is continuing its line of wood and metal patterns.

* * *

STEEL IMPROVEMENT & FORGE CO., 5003 Windsor avenue, Cleveland, will move July 15 to its new plant at Addison road and Metta avenue, instead of June 1 as originally planned.

* * *

WALSH & WEIDNER BOILER CO. and Casey-Hedges Co., both of Chattanooga, Tenn., are combining as Hedges, Walsh & Weidner Co., but production will continue separately.

* * *

WALKER & MEADE has been formed by W. J. Walker and J. A. Meade to take over the business of the W. B. George Foundry Machinery Co., 3133 West Lake street, Chicago. The company manufactures steel diamond stars for cleaning castings.

* * *

B B. PATTERN SHOP, 6411 Union avenue, Cleveland, is being conducted by William R. Butler, who has become sole owner since the death of the president, George E. Butler, last October. The line of wood and metal patterns is being continued.

* * *

K & M. BRASS & ALUMINUM CASTINGS CO. Cleveland, has resumed operations after being idle a year. Officers of the company are: President, A. F. Misch; treasurer and secretary, E. J. Kortan; and general manager, R. F. Male.

* * *

CHICAGO TRAILMOBILE CO., 3900 South Wabash avenue, Chicago, has been incorporated to continue the branch of the Trailmobile Co., Cincinnati, which has been operated by Harry B. Vested for nine years. Harry B. Vested is president, C. S. Vested treasurer and M. E. Burr secretary.

* * *

GASKILL INDUSTRIAL FURNACE CORP. is the new name of the U. S. Industrial Engineering Co., Cleveland. With the Gaskill corporation has been merged the Trumbull Mfg. Co., Warren, O., and henceforth operations and headquarters will be at Warren. The capital of the company has been doubled.

* * *

JOSEPH GREENSPON'S SONS IRON & STEEL CO., St. Louis, has purchased the plant of the Sharon Pressed Steel Co., Wheatland, Pa., from Weaver H. Rogers & Co., Inc. Pittsburgh, representing the Cleveland Securities Corp. The purchaser, it is understood, will operate the plant.

* * *

MERIT METAL SPECIALTIES CO., 4608 West Twentieth street, Chicago, recently incorporated for $10,000 to do general machine work and make metal specialties of all kinds, has the following officers: President, Harry Schugart; vice president, Frank Nessling; and secretary-treasurer, William Glaubke.

* * *

GOGAN MACHINE & FOUNDRY CO., 1440 East Fifty-fifth street, Cleveland, will change its name to the Gogan Machine Co., July 1. It will no longer operate a foundry. The company, which may enlarge, manufactures equipment for heat treating plow disks and automobile and railroad spring, bumper and shaft heating treating machines.

* * *

ROCKFORD IRON WORKS, Rockford, Ill., which was purchased recently by I. Patrick, John W. Holstead and John L. Patrick, is being operated by the purchasers as an independent concern and is not identified in any manner with the company with which the three buyers formerly were associated.

* * *

A O. SMITH CORP., Milwaukee, made the first shipment, May 24, on an order for 21,000 tons of welded steel pipe for a gas line from Alto, La., to Latex, Tex. Because of the sudden changes in temperature in the territory traversed by the line, engineers of the Smith corporation were called upon to perfect an expansion joint.

* * *

SPRINGFIELD AUTO BODY & WELDING CO., Springfield, Mass., has been incorporated for $25,000 to give opportunity for expansion, but offices will be continued at 147 Taylor street, Springfield, as for the past seven years and no changes in the name and working policies are proposed. John Salo is president, Lars I. Terho treasurer and Lewis H. Reed secretary.

* * *

J H. WILLIAMS & CO., Buffalo, and the Husky Wrench Co., Milwaukee, announce they have effected a reciprocal sales arrangement which enables them to supply the trade with a line of combination wrench sets. Each of these sets is composed of Williams' "Super-renches"

(*Concluded on Page* 1458)

Trade Balance Less Favorable

Excess of Exports Over Imports Shrinks 5000 Tons in April—Month's Daily Rate, Both of Exports and Imports, Best of Year to Date—Scrap Shipments Show Marked Gain—Imports of Pig Iron Continue Heavy

BECAUSE the decline in imports of iron and steel in April was more than neutralized by a shrinkage in exports, the month developed a slightly less favorable trade balance than did March. Considered on a daily basis, both imports and exports in April were at the highest rate of 1928 to date.

April exports totaled 215,184 tons, compared with 221,935 tons in March and 192,339 tons last April. Imports at 72,329 tons in April contrasted with 74,128 tons in March and 60,374 tons in April, 1927. The excess of exports over imports in April was 142,855 tons; in March 147,807 tons. Last April it was only 131,965 tons.

IMPORTS AND EXPORTS
Gross Tons

	—1928—		—1927—	
	Imports	Exports	Imports	Exports
Jan.	58,635	205,766	63,404	215,235
Feb.	47,628	185,915	49,451	166,128
March	74,128	221,935	61,872	171,094
April	72,329	215,184	60,374	192,339
May	.....	.....	79,814	202,708
June	.....	.....	69,017	184,364
July	.....	.....	61,112	190,502
Aug.	.....	.....	68,386	175,636
Sept.	.....	.....	58,464	166,352
Oct	.....	.....	52,503	170,255
Nov.	.....	.....	61,882	177,928
Dec.	.....	.....	64,188	168,428
Total	252,720	828,800	750,467	2,180,969

Iron and steel scrap exports in April soared to 40,616 tons, an increase of 14,000 tons over March and topping all other commodities in the iron and steel classification. Steel rails were second in April with 24,449 tons, compared with 15,798 tons in March.

Pig iron led April imports with a total of 20,845 tons, against 16,155 tons in March. Structural shapes were a close second at 16,577 tons, a decline of about 500 tons from the previous month.

For the four months ended with April, exports have amounted to 828,800 tons, a substantial gain over the 745,820 tons shipped out in the corresponding period of 1927. Imports in the four-month period totaled 252,720 tons, against 235,053 tons a year ago.

The daily rate of exports in April was 7173 tons, contrasted with a four-month average of 6849 tons. For imports the April rate was 2411 tons, against a four-month average of 2088 tons.

The countries of North and Central America and the West Indies received 48.8 per cent of the iron and steel products shipped from the United States in April. South American consumers took 18.3 per cent and European countries took 11.1 per cent.

Steel rail exports, which made a substantial gain over March, went mostly to Chile, China, Colombia and Canada. Chile received 6817 tons of rails while the other three countries named took around 3500 tons each. Canada and Japan were mainly responsible for the heavy shipments of scrap. Canada took 13,555 tons and Japan took 11,540 tons. The United States shipped 9317 tons of scrap

ORIGIN OF PIG IRON IMPORTS
Gross Tons

From:	April	March
Belgium	5	.....
Netherlands	5,204	1,929
Mexico	32	31
Sweden	457	.....
United Kingdom	8,897	10,748
Canada	54	59
New Zealand	2,000	.....
British India	4,196	3,358
Norway	.....	50
Totals	20,845	16,155

ORIGIN OF IRON ORE IMPORTS
Gross Tons

From:	April	March
Sweden	13,231	6,383
Australia	4,614	.....
Canada	3,288	217
Cuba	26,086	47,200
Chile	120,000	90,800
Algeria and Tunis	57,622	9,693
Spain	.....	250
Brazil	.....	8,000
France	.....	30
Jamaica	.....	81
Totals	224,841	162,654

ORIGIN OF MANGANESE IMPORTS
Gross Tons

From:	April	March
Germany	17	3
Soviet Russia in Europe	3,592	.....
Brazil	6,305	10,187
British India	4,160	2,584
United Kingdom	.....	12
Totals	14,074	12,786

ORIGIN OF FERROMANGANESE IMPORTS
(Concentrates)
Gross Tons

From:	April	March
Belgium	39	.....
United Kingdom	1,374	1,971
Canada	1,079	1,056
France	.....	16
Sweden	.....	43
Norway	.....	1,573
Italy	.....	7
Totals	2,566	4,666

ORIGIN OF IMPORTS
Gross Tons

From:	Steel bars	Steel scrap	Cast iron pipe	Ingots, blooms, etc.
Austria	10	.....	.....	15
Belgium	3,433	.....	1,578	980
France	2,744	.....	4,896	287
Germany	1,221	94	92	86
Sweden	658	10	.....	248
United Kingdom	113	36	.....	6
Canada	10	1,760	.....	3
Czechoslovakia	20	.....	.....	10
Norway	3	.....	.....	.....
Mexico	.....	38	.....	.....
Italy	.....	15	.....	.....
Totals	8,212	1,953	6,566	1,635

IMPORTS OF IRON AND STEEL
Gross Tons

	April 1928	March 1928	January through April 1928	January through April 1927
Pig iron	20,845	16,155	54,514	30,158
Ferromanganese and alloys (1)	2,566	4,666	13,441	8,749
Ferrosilicon (2)	367	147	1,212	4,320
Ferrochrome (3)	36	50	224	370
Scrap	1,953	2,522	11,168	21,180
Iron Slabs	.....	3	4	....
Steel ingots, blooms, billets, etc	1,635	2,112	6,100	4,652
Steel bars	8,212	9,991	34,889	31,827
Iron bars	355	27	815	1,965
Wire rods	1,075	2,135	6,474	4,614
Hoops, bands and scrolls	1,586	2,949	7,938	8,884
Boiler and other plate	80	308	460	2,176
Sheets, skelp and saw plate	992	2,708	9,482	4,569
Tin plate	97	24	166	100
Structural shapes	16,577	17,131	58,238	48,532
Rails and splice bars	1,230	940	5,501	5,737
Cast iron pipe	6,566	6,280	19,842	33,402
Other pipe and tubes	6,211	3,504	14,157	15,118
Barbed wire	272	400	1,258	2,210
Round iron and steel wire	478	386	1,439	1,279
Steel telegraph, telephone wire	....	....	46	25
Flat wire and strip steel	153	240	741	938
Wire rope and strand	92	138	498	925
Other wire	43	94	231	203
Nails, tacks and staples	688	709	2,334	1,788
Bolts, nuts, rivets and washers	22	9	87	86
Castings and forgings	198	500	1,461	1,246
Total	72,329	74,128	252,720	235,053

(1) Manganese content.
(2) Silicon content.
(3) Chromium content.

IMPORTS BY COUNTRIES OF ORIGIN
Gross Tons

	April 1928	January through April 1928	January through April 1927
Austria	25	133	303
Belgium	19,219	73,707	72,596
Czechoslovakia	32	863	519
France	11,645	40,971	44,079
Germany	10,789	38,132	44,900
Italy	39	112	272
Netherlands	5,357	12,399	11,859
Norway	3	2,830	4,530
Poland and Danzig	441	3,193	260
Sweden	2,379	7,761	7,029
Switzerland	22	23	19
United Kingdom	12,378	36,276	17,628
Canada	3,721	15,905	21,249
Mexico	70	191	159
Cuba	12	12	2,188
British India	4,196	16,962	7,248
Japan	1	32	14
New Zealand	2,000	2,000	.....
Denmark	.....	204	61
China	.....	1	4
Bulgaria	.....	2	.....
Panama	.....	381	19
Jamaica	.....	628	.....
Hong Kong	.....	2	4
Other countries	.....	.....	.....
Totals	72,329	252,720	235,101

to Poland and Danzig during April.

Exports of tin and terne plate totaled 19,809 tons, of which Canada received 3842 tons and China 3736 tons. Philippine Islands were sent 1384 tons. Total exports of plates in April were 9824 tons, of which 7733 tons went to Canada. Barbed wire shipments to Brazil totaled 2524 tons out of the total of 6712 tons exported in April.

Registers Trade Mark

The Columbia Steel Co., Butler, Pa., recently purchased by the American Rolling Mill Co., Middletown, O., has registered its trade mark, "Stripsheets," in the United States patent office.

Forged steel rolls were in general use about 1735.

EXPORTS OF IRON AND STEEL
Gross Tons

Item:	April 1928	March 1928	January through April 1928	January through April 1927
Pig iron, not including ferro-alloys	3,701	4,356	15,954	13,561
Ferromanganese, spiegeleisen	1,324	69	3,463	117
Scrap	40,616	26,510	126,120	51,725
Ingots, blooms, skelp, etc.	7,657	11,710	32,909	20,074
Iron bars	613	222	1,405	1,732
Steel bars	12,660	12,005	43,226	40,713
Alloy steel bars	1,543	1,258	4,339	1,840
Wire rods	2,711	2,134	10,160	5,922
Plates	10,043	12,787	44,034	44,301
Galvanized sheets	12,534	15,531	50,481	59,309
Black steel sheets	11,681	13,292	55,816	60,371
Black iron sheets	1,417	1,151	4,673	6,011
Hoops, bands and strip steel	4,161	5,329	16,595	17,212
Tin plate, terne plate, etc.	19,809	22,755	80,361	115,627
Structural shapes, plain	13,653	15,148	52,019	38,526
Structural materials, fabricated	6,908	5,915	23,637	21,232
Metal lath	358	479	1,520	1,436
Steel rails	24,449	15,798	78,852	69,763
Rail fastenings, switches, frogs, etc.	3,786	6,271	22,939	10,222
Boiler tubes and welded pipe	14,645	23,214	73,490	103,310
Malleable iron screwed pipe fittings	740	854	3,596	3,416
Cast iron screwed pipe fittings	409	610	1,884	2,024
Cast iron pressure pipe and fittings	270	1,976	4,774	3,547
Cast iron soil pipe and fittings	926	1,356	4,156	2,807
Plain wire	3,163	5,072	15,233	10,194
Barbed wire, woven wire fencing	7,240	7,076	24,271	13,160
Wire cloth and screening	84	178	558	725
Wire rope	267	442	1,746	1,584
Insulated wire and cable	41	60	188	170
Other wire and manufacturers of	498	986	2,819	3 149
Wire nails	1,790	1,175	5,477	2 372
Nails, other than wire	974	838	3,103	2,357
Tacks	72	90	299	307
Horseshoes	30	38	142	149
Bolts, nuts, rivets, except track	1,062	1,119	3,992	3,777
Car wheels and axles	861	1,212	4,421	4,214
Iron castings	938	1,393	4,602	4,491
Steel castings	731	914	3,248	2,616
Forgings	819	612	2,298	1,757
Total	215,184	221,935	828,800	745,820

DESTINATION OF APRIL IRON AND STEEL EXPORTS
Gross Tons

	Rails	Galvanized sheets	Plates not fabricated	Tin terne plate	Steel sheets	Barbed wire	Steel bars	Steel scrap
Argentina	.....	878	63	2,091	.....	1,273	.....	.....
Australia	.....	25	.....	.....	192	.....	.....	.....
Brazil	4,629	1,363	9	534	.....	2,524	11	.....
British India	.....	255	.....	.....	.....	.....	.....	.....
British Malaya	.....	.....	.....	54	.....	.....	.....	.....
British S. Africa	.....	3	.....	.....	.....	160	.....	.....
Canada	3,410	2,952	7,728	3,842	7,074	367	8,129	13,555
Central America	866	306	190	.....	.....	189	672	.....
Chile	6,817	199	46	200	.....	.....	.....	.....
China	3,387	36	.....	3,736	.....	.....	8	979
Colombia	3,771	393	1	141	.....	348	.....	.....
Cuba	13	564	94	764	.....	496	679	.....
Dutch East Indies	.....	530	.....	.....	.....	.....	.....	.....
Dutch West Indies	14	.....	.....	80	.....	.....	.....	.....
Europe	.....	.....	.....	.....	104	.....	97	.....
Other Europe	.....	.....	.....	168	.....	.....	.....	.....
France	.....	.....	.....	.....	401	.....	.....	.....
Germany	.....	.....	22	.....	.....	.....	.....	.....
Italy	.....	.....	.....	1,395	.....	.....	.....	4,951
Japan	.....	96	.....	3,612	2,953	.....	62	11,540
Java and Madura	.....	.....	.....	6	.....	.....	.....	.....
Mexico	253	731	91	460	189	736	40	99
Norway	.....	85	.....	.....	.....	.....	.....	.....
Peru	166	.....	92	319	79	.....	108	.....
Philippine Islands	185	.....	525	1,384	148	202	135	.....
Poland and Danzig	.....	.....	.....	.....	.....	.....	.....	9,317
United Kingdom	.....	.....	.....	.....	54	.....	1,285	.....
Uruguay	.....	.....	.....	554	.....	.....	.....	.....
Venezuela	3	.....	.....	4	.....	.....	.....	.....
	24,449	12,534	9,824	19,809	11,681	6,712	12,660	40,616

DESTINATION OF EXPORTS
Gross Tons

Country of destination	Apr. 1928	Jan. thru Apr. 1928	Jan. thru Apr. 1927
North and Cent. America and West Indies	104,063	392,787	352,109
Canada, Newfoundland	85,500	316,985	270,838
Cuba	4,836	21,636	27,757
Mexico	4,393	24,395	26,952
Guatemala	493	4,857	3,209
Panama	1,631	6,138	6,099
Salvador	135	866	1,771
British West Indies	692	2,454	5,453
Other West Indies	4,829	9,588	4,920
Other Cent. America	1,554	5,868	5,110
South America	39,506	143,747	138,697
Argentina	7,033	30,601	30,379
Brazil	10,626	30,837	31,511
Chile	8,143	26,263	9,187
Colombia	6,849	23,674	25,563
Peru	1,775	10,044	9,758
Uruguay	1,265	3,064	5,141
Venezuela	3,154	17,124	26,320
Other So. America	663	2,140	838
Europe	23,845	63,630	55,668
Belgium	1,326	5,025	1,304
France	599	1,416	1,179
Greece	33	150	933
Italy	6,450	10,461	13,036
Netherlands	92	888	1,308
Russia	138	1,360	2,065
United Kingdom	3,337	16,599	25,655
Other Europe	11,871	27,731	10,188
Far East	47,168	223,687	192,767
British Malaya	731	2,652	4,817
China	11,007	43,964	25,056
Dutch East Indies	2,869	9,272	15,991
India and Ceylon	1,249	10,869	13,245
Japan and Chosen	21,294	113,178	92,689
Kwangtung	44	1,914	6,910
Philippine Islands	8,126	33,610	16,439
Australia	865	5,343	11,225
New Zealand	354	850	590
Other Asia, Far Eastern markets	629	2,035	5,805
Africa	599	4,949	6,579
British So. Africa	281	2,421	2,527
Egypt	156	1,575	1,681
Mozambique	100	308	1,854
Other Africa	62	645	517

The Air Reduction Sales Co., 342 Madison avenue, New York, has had published for general distribution a 12-page bulletin dealing with "Oxy-acetylene Welding in the Foundry." The material in the bulletin is taken from a paper prepared by G. F. Wieser, of the engineering department of the company.

Exports of Metalworking Machinery

(In number except where otherwise specified)

	April 1928	April 1927	January through April 1928	January through April 1927
Engine lathes	39	61	269	194
Turret lathes	41	15	126	59
Other lathes	125	27	267	139
Vertical boring mills and chucking machines	8	10	34	40
Thread-cutting and automatic screw machines	64	102	294	304
Knee and column type milling machines	19	22	106	88
Other milling machines	43	46	222	120
Gear-cutting machines	30	29	111	101
Vertical drilling machines	62	17	197	99
Radial drilling machines	8	8	55	28
Other drilling machines	71	118	250	584
Planers and shapers	46	43	159	152
External cylindrical grinding machines	59	100	313	258
Internal grinding machines	37	53	156	128
Metalworking tool-sharpening machines	44	61	182	310
Other metal-grinding machines, pounds	114,841	76,442	670,470	381,870
Sheet and plate metalworking machines, pounds	364,417	462,559	2,154,836	1,477,681
Forging machinery, pounds	230,732	250,258	1,123,599	1,208,247
Rolling-mill machinery, pounds	1,904,223	665,022	3,600,961	2,746,217
Foundry and molding equipment, pounds	511,606	352,776	2,774,822	1,976,628
Other power-driven metalworking machinery and parts, pounds	1,302,407	.....	3,445,887	.....
Pneumatic portable tools	2,462	1,823	7,465	5,847
Other portable and hand or foot operated metalworking machines and parts, pounds	153,729	77,917	374,355	251,507
Chucks for machine tools	1,42	1,567	3,781	6,516

Here and There

(*Concluded from Page* 1455)

and Husky socket wrenches. This arrangement enables each company to merchandise in combination sets the other's quality open-end or socket wrenches. It is made for sales purposes only and is limited to the items which constitute these sets.

* * *

FULTON IRON WORKS, St. Louis, has purchased the Foos Engine Co., Springfield, O., through an exchange of common stock and will operate the Springfield company as a branch. The Fulton Iron Works now has a full range of diesel engines.

* * *

ROBBINS & MYERS CO., Springfield, O., continues the subject of reorganization conferences. Cleveland and Springfield capital has purchased assets of the old company and incorporated Robbins & Myers Inc. W. J. Quinlan, Cleveland, is reported slated for president, resuming the post he vacated several months ago.

* * *

CHISHOLM-MOORE MALLEABLE CO., Cleveland, organized to take over the foundry division of the Chisholm & Moore Mfg. Co. when the chain block electric hoist and crane divisions of the latter company were acquired by the Columbus McKinnon Chain Co., Tonawanda, N. Y., has elected the following officers: President and treasurer, J. M. Redhead; vice president, A. H. Chappelka; and secretary, D. J. Johnson. The Malleable Iron company has been incorporated with $400,000 of preferred stock and 6000 shares of no par common.

Bauxite Production Down

Domestic production of bauxite in 1927 totaled 320,940 long tons valued at $1,988,780, a decrease of 18 per cent in both quantity and value from 1926, according to the federal bureau of mines. Domestic sales of bauxite in 1927 were 320,940 tons, against 392,250 tons in 1926. Imports in 1927 totaled 356,580 tons, valued at $1,572,236, against 281,644 tons, valued at $1,187,497, in 1926.

Implement Exports Up

Exports of agricultural implements 1928, were valued at $8,035,812, acfrom the United States in February, cording to the agricultural implements division, department of commerce. This was approximately $2,500,000 greater than the total for January, 1927, and an increase of slightly more than $175,000 over the exports of January of this year.

Exports of implements of cultivation during February were $250,000 greater than in February a year ago. The feature was the large increase in wheel tractors, of which 5668 were exported, slightly more than twice the number exported in February, 1927.

British Foundrymen Are Arranging Meeting

The annual convention of the Institute of British Foundrymen is to be held at Leicester, June 12-15. At the opening meeting on June 13, President Elect S. H. Russell of the S. Russell & Sons, brass and iron founders, will assume office and will deliver his presidential address.

Papers to be presented and discussed at the sessions are as follows: "A Study of the Phenomenon of Contraction in an Iron Casting," the French exchange paper, by Maurice Servais; "Malleable Castings," by W. T. Evans and A. E. Peace, Ley's Malleable Castings Co. Ltd., Derby; "Steel Castings for Severe Service," American exchange paper, by John Howe Hall; "Aluminum Casting Alloys," by G. Mortimer, William Mills & Co. Ltd., Birmingham; "The Soundness of Rammed Molds," Belgian exchange paper, by Ivan Lamoureux, vice president, Belgian foundrymen's association; "Iron Foundry Casting," by W. R. Wintle, Sheepbridge Coal & Iron Co. Ltd.

During the convention visits will be paid to the Stanton Ironworks Co. Ltd.; British Thomson Houston Co. Ltd.; Rugby, Wadkin & Co. Ltd.; Ley's Malleable Castings Co. Ltd.; chief mechanical engineer's department of the London, Midland and Scottish Railway Co.; Rolls-Royce Ltd.; Herbert Morris Ltd.; John Taylor & Co.; and Loughborough college.

Foundation Carrying on Considerable Research

In its report for the year ended Feb. 16, 1928, the Engineering Foundation, 29 West Thirty-ninth street, New York, summarizes its financial status and the investigational work conducted during the year. Among researches in progress in co-operation with engineering societies, industries, universities and governmental bureaus were fatigue of metals, steel columns for bridges and buildings, blast furnace slags, electrical insulation, lubrication, steam, strength of gear teeth, personnel and engineering education. Preliminary inquiries were made in several subjects which may develop into going researches during the new year, if funds can be provided.

The report, which is designated as publication No. 15, includes the following information: Summaries of investigations; financial statement; officers, members and personnel of committees; contributors; and lists of publications and research narratives issued to date. The Engineering Foundation is sponsored by the American Society of Civil Engineers, American Institute of Mining and Metallurgical Engineers, American Society of Mechanical Engineers and American Institute of Electrical Engineers.

Foundation Re-elects

Lewis Buckley Stillwell of New York has been re-elected chairman of the Engineering Foundation, the research organization of the national engineering societies, it has just been announced. Mr. Stillwell, who enters upon his fourth term, is past president of the American Institute of Electrical Engineers and the American Institute of Consulting Engineers. The following vice chairmen were re-elected: Arthur D. Little, president, Arthur D. Little Laboratories, Cambridge, Mass.; and George A. Orrok, a member of the American Society of Mechanical Engineers, American Institute of Mining and Metallurgical Engineers and American Society of Civil Engineers.

Alfred D. Flinn again was named director and secretary and Jacob S. Langthorn, treasurer. A gift of $10,000 to the Foundation endowment by the Central Hudson Gas & Electric Corp. has been announced.

Boston Has Brass Group

A group of brass foundrymen and of those interested in the casting of brass and nonferrous metals has been formed in New England with headquarters at Boston. This group is called the Associated Brass Founders of New England. Justice A. Duncan, William Duncan & Sons Foundry Co., East Boston, Mass., has been chosen president and L. P. Robinson, New England manager, Werner G. Smith Co., Boston, named secretary. The association meets on the fourth Wednesday of each month at the Engineers' club, Boston. Its purpose is to promote better understanding and co-operation among its members. Already an ambitious program of uniform cost accounting has been launched.

Machinery

Placing of $350,000 Crane Orders Is One Feature of Week's Trading—Machinery Sales in May Total About the Same As in April

IN SOME areas business for May has improved somewhat over that placed in April; in others it has shrunk slightly. For the most part orders are small and inquiries are few and well scattered. Commonly expressed opinions are that sales will taper off noticeably during the next two months, principally for seasonal reasons, but a good upturn is expected to follow. One of the features of the past week is the placing of about $350,000 in cranes in the Pittsburgh territory. The bulk of this business was for the Wheeling Steel Corp. and Carnegie Steel Co. and was divided between the Morgan Engineering Co. and Alliance Machine Co. Westinghouse Electric & Mfg. Co. has concluded buying on its second quarter list. Its third quarter list is due late in June.

New York, May 29.—Machine tool demand continues to ease off, with sellers generally reporting a less active market in May than in April. However, business has been moderately good and considering the first five months of this year as a whole, trading has been good. Current trading is comprised almost entirely of orders for one and two machines, with little outstanding in the way of fresh inquiry. New York Central continues to bring out an occasional inquiry, and General Electric Co., Schenectady, N. Y., has added a few additional machines to its already substantial pending list. Crane demand continues exceedingly dull, this applying to both overhead and locomotive cranes.

Worcester, Mass., May 29.—New buying of machine tools continues to embrace a wide field and business is developing from unexpected sources. Factors expected to take tools in some instances have failed to do so. The total is made up largely of individual units and lacks inquiry and specifications for large lists. Production units lead and the demand for parts and replacements shows slight increase in spots. Machine shop trade is steady as is the movement of grinding machinery. Textiles are slow to take machinery. The strike in the largest New England cotton center continues to drag along. There is little snap to the dealers' market and prices are inclined to be weak for used machinery. A wood-working interest is expected to inquire for a fairly sizable list next week.

Cleveland, May 29.—For both dealers and manufacturers in this vicinity, business has held up well during the last month. In some cases, the sales total will show an increase, in others it will come close to the April volume. One dealer has placed on his books a good-sized order from the Chrysler Corp. for equipment to be used in the manufacture of the recently announced DeSoto car. To maintain secrecy, this business was placed some time ago directly with factories and has just within the last few days been transmitted to dealers. Deliveries of the machinery already are under way. Few inquiries are before the trade and no one will venture a guess as to business during the next two months. Present sales are small, one or two units at a time, and frequently originate with the prospective purchaser calling upon the dealer. Used tools are moving well.

Pittsburgh, May 29.—Once again "crane week" has been celebrated in the Pittsburgh area with a number of orders being placed aggregating in value in excess of $350,000. Morgan Engineering Co. and Alliance Machine Works shared the Wheeling Steel Corp. order for several cranes, and these two companies also divided the Carnegie Steel Co. order for three cranes for the McDonald works. Several other single crane orders were also placed. In connection with machine tools, the market is exceptionally quiet, a few small units only being sold. . General Electric Co. in establishing a service shop here bought a few tools, among them being an upright drill, two grinders and two lathes. Westinghouse Electric & Mfg. Co. bought a 70-inch lathe and now is understood to be through with its buying on its second quarter list. Its third quarter inquiry is not expected until late in June, but the trade is promised that it will be much larger.

Chicago, May 29.—Moderate improvement is shown in industrial inquiry for machine tools as compared with a week ago, and a fairly heavy volume of sales is reported, but railroad business continues light. Rock Island has come out for 15 duplex floor grinders and a duplex abrasive wheel grinder. Missouri Pacific is inquiring for flue shop equipment and several other tools, most of which will be bought in the St. Louis district. It is reported that Chicago, Burlington & Quincy will put a list in a few weeks, although no official confirmation is obtainable. Santa Fe has closed on three 36-inch lathes, two 18-inch lathes and a 30-inch lathe in addition to a horizontal boring and drilling machine and several other items. Industrial orders for the week included a half dozen milling machines, several shapers and sheet metal shop equipment. One of the farm equipment makers again was in the market. Most dealers in this territory report business the first four months this year 15 to 20 per cent ahead of the similar period last year. In general, the volume for May is expected to show a gain over April and is likely to be more comparable with March business.

CRANE ORDERS PLACED

Five electric overhead cranes, including one 60-ton with 15-ton auxiliary for 60-inch mill building, one 50-ton with 15-ton auxiliary for motor room, three 25-ton for cooling beds and coil storage building, and one extra 25-ton trolley for any of 25-ton cranes, for Wheeling Steel Corp., Wheeling, W. Va., awarded to Alliance Machine Co.

Three cranes, including one 60-ton hot metal crane and two strippers, for Wheeling Steel Corp., to Morgan Engineering Co.

Two cranes, including one 10-ton and one 15-ton for Carnegie Steel Co., McDonald, O., to Morgan Engineering Co.

Two 5-ton cranes for Heppenstall Forge & Knife Co., Detroit, to Northern Engineering Works.

Among single orders were: 15-ton crane for Carnegie Steel Co., McDonald, O., to Alliance Machine Co.; 5-ton crane for Heppenstall Forge & Knife Co., Pittsburgh, to Alliance Machine Co.; 25-ton crane with 5-ton auxiliary for Park works of Pittsburgh Crucible Steel Co., to Harnischfeger Corp.; 20-ton crane for Lorain Steel Co., Johnstown Pa., to Alliance Machine Co.; 20-ton crane for Nazareth Cement Co., Nazareth, Pa., awarded through Ford, Bacon & Davis to unnamed builder; 5-ton handpower crane for James A. Coe & Co., Newark, N. J., to Chisholm & Moore Mfg. Co.; 5-ton crane for Phoenix Utility Corp., to Box Crane & Hoist Corp.; 25-ton locomotive crane for India Street Lumber Terminal, Brooklyn, N. Y., to Browning Crane Corp.; 5-ton electric crane for Empire Architectural Iron Works, New York, to Northern Engineering Works; 2-ton underhung power crane for Union Railway Co., Bronx, New York, to New Jersey Foundry & Machine Co.

CRANE ORDERS PENDING

Five electric locomotive cranes for Amtorg Trading Corp., New York; pending.

Building Contractors Set Up Committee

Washington, May 29.—Representative subcontractors and general contractors have joined in the Allied Construction Industries committee, a new organization recently formed at Washington in an effort to correct improper practices and stabilize credit conditions in the building and construction industry.

Formal organization of the committee followed a series of preliminary conferences at West Baden, Ind., Cleveland and Chicago under the auspices of the Associated General Contractors of America. Members of the committee representing 13 national associations will meet at Detroit in June to perfect the organization. George B. Walbridge, Detroit, presided at the organization meeting at Washington.

The United States shipped 14,058 tons of iron and steel scrap to Canada during March.

CONSTRUCTION and ENTERPRISE

Concise Timely Business Building Opportunities from Field of Industry

North Atlantic

PORTLAND, ME.—Maine Steel Products Co. has been established here to manufacture and deal in snow plows, snow removal machines and other types of highway construction equipment.

PORTLAND, ME.—Babb'tt Machine Co. has been incorporated with $100,000 capital to manufacture castings and tools by Charles E. Babbitt, South Portland.

BALTIMORE—National Casket Co., 821 East Lombard street, plans to build a plant addition, 67 x 80 feet.

MOUNTAIN LAKE PARK, MD.—Mount Airy Canning Co. plans to build an addition to its power house, including the installation of boilers, equipment, etc.

AMHERST, MASS.—Amherst college has awarded the contract for the construction of a chemical laboratory to Casper Construction Co., Holyoke, Mass.

BOSTON—New England Fuel & Transportation Co., 250 Stuart street, plans to build two coke ovens on Rover street, Everett, Mass.

NEWTON, MASS.—Lenk Mfg. Co., manufacturer of gas and alcohol blow-torches, will occupy the plant formerly occupied by the Suffolk Knitting Mills. D. Allen Lenk is treasurer of the company.

HAWTHORNE, N. J.—City is inquiring for pumping equipment to be installed in its waterworks.

JERSEY CITY, N. J.—H. E. Salzberg, 54 Brook street, has let the contract for a 1-story machine shop, 50 x 214 feet.

NEWARK, N. J.—Fire-Escape Protective Corp. has been incorporated with $100,000 capital to manufacture fire escapes by Matthew Krafte, Newark, attorney.

PATERSON, N. J.—Wright Aeronautical Corp. will install power plant equipment in a new addition on Lewis street.

BINGHAMPTON, N. Y.—Afga-Ansco Corp. has awarded the contract for structural steel for a manufacturing plant to Kellogg Structural Steel Co. Concrete bar contract award has been made to Jones & Laughlin Steel Corp. (Noted May 10.)

BROOKLYN, N. Y.—Brooklyn Union Gas Co., 176 Remson street, plans to build a 1-story by-products plant.

BROOKLYN, N. Y.—Clarostat Mfg. Corp. has been incorporated with $50,000 capital to manufacture and deal in dies, tools, motors, etc., by M. Hart, 287 Broadway, New York, attorney.

BUFFALO—Pratt & Letchworth, 189 Tonawanda street, manufacturer of iron castings, is planning expansion and improvements.

MT. VERNON, N. Y.—Ward Leonard Electric Co., manufacturer of electrical resistance products, is building a 1-story plant addition, 115 x 116 feet.

NEW YORK—American Vending Machine Co. has been incorporated with $100,000 capital by M. Kaplan, 350 Broadway, attorney.

NEW YORK—Crogs Process Corp. has been incorporated with $100,000 capital to manufacture coal pulverizers by Herman & Ernst, 170 Broadway, attorney.

NEW YORK—Benjamin Low Roofing & Sheet Metal Works has been incorporated with $10,000 capital by N. S. Rein, 36 West Forty-fourth street, attorney.

NEW YORK—L. S. E. Co. has been incorporated with $300,000 capital to manufacture and deal in machinery by C. A. Brooks, 111 Broadway, attorney.

NEW YORK—M. Raubvogel Co., 106 East 104th street, manufacturer of bakers' fixtures and equipment, will remodel a building it has recently purchased, for a new plant.

NEW YORK—Jamaica Bakers' Fixtures & Machinery Co. has been incorporated with $5000 capital by B. Berg, 1114 DeKalb avenue, Brooklyn, attorney.

NEW YORK—National Noolite Corp. has been incorporated with 200 shares no par value stock to manufacture and deal in machinery by H. D. Chadwick, 1819 Broadway, New York.

NEW YORK—Canaday Coolers Co. has been incorporated with $100,000 capital to manufacture and deal in electrical refrigerators with $100,000 capital by M. Zinaman, 1270 Broadway, attorney.

NEW YORK—Continental Can Co., 100 East Forty-second street, has awarded the general contract for a 5-story plant, 198 x 200 feet, to be built at Thirty-fifth and Rockwell streets, Chicago. (Noted April 19.)

NEW YORK—Bayonne Steel Ceiling Co., 223 West Nineteenth street, has awarded the contract for a 2-story manufacturing plant to be built at Long Island City, to Wilcox Construction Co. Inc., 1 Bridge Plaza, Long Island City.

ROCHESTER, N. Y.—Rochester Brass & Iron Works Co. will move to its new location at Mount Hope and South avenues, where it plans erecting a new building. The present plant of the Rochester company has been sold to Barr & Creelman Co.

YONKERS, N. Y.—Radiator Heating Corp. has been incorporated with $10,000 capital to manufacture and deal in electrical machines by L. Cohen, 1776 Broadway, New York, attorney.

PHILADELPHIA—Nice Ball Bearing Co. plans to install power plant equipment in a new addition. (Noted April 26.)

PHILADELPHIA—Philadelphia Coke Co. has awarded the contract for structural steel for

Resale Equipment News

STEEL plates, shapes, rivets, etc., will be sold by sealed proposal by the cost inspection board, United States navy. The material may be seen prior to the sale at the Bethlehem Shipbuilding Corp. Ltd., Fore River plant, Quincy, Mass. Bids will be opened June 12.

* * *

Property of the Ashland Steel Co., Ashland, Ky., will be offered for sale by the court June 7 as a result of foreclosure proceedings.

* * *

Assets of Texas Laundry Machinery Co., San Antonio, Tex., will be sold June 6 by Coppard, 614 Alamo National Bank Building, San Antonio, trustee.

* * *

The two plants of the former Rickenbacker Motor Co., Detroit, to be sold June 21 as noted in last week's IRON TRADE REVIEW, are located at 4815 Cabot avenue and Twelfth, Stanley and Grand Trunk railroad. The former consists of 25 acres and the latter of almost seven acres, with Grand Trunk railroad connection. The buildings have approximately 275,000 square feet of floor space.

Sales Calendar

June 5—Auction sale navy surplus, New York Navy Yard.

June 6—Assets of Texas Laundry Machinery Co., San Antonio, Tex., to be sold by M. Coppard, trustee.

June 7—Sale of Ashland Steel Co. properties at Ashland, Ky.

June 12—Sale of shapes, plates, rivets, etc., by cost inspection board, United States navy, at Fore River plant of Bethlehem Shipbuilding Corp. Ltd., Quincy, Mass. Sale is by sealed proposal.

June 21—Auction of Rickenbacker plants at Detroit.

its plant to McClintic-Marshall Co., Pittsburgh.

PHILADELPHIA—J. C. Kahn, Morris building, plans to build a 2-story plant, 60 x 277 feet, for the manufacture of electric lighting equipment.

PITTSBURGH—Star Ornamental Iron & Wire Works, 2319 Forbes street, plans to build a 1-story plant.

PITTSBURGH—Miller Saw Trimmer Co. has awarded the contract for concrete reinforcing bars to Truscon Steel Co. (Noted May 10.)

PITTSBURGH—Heppenstall Forge & Knife Co., 4620 Hatfield street, has awarded the contract for a 1-story plant addition, 100 x 200 feet, to be built on Butler street.

VERONA, PA.—Allegheny Metal Products Co., 1902 Brighton road, contemplates building a machine shop. P. C. Gasparin is president.

East Central

CHICAGO—Metalloid Corp., 53 West Jackson boulevard, has a two-year expansion program for its mineral drying and grinding plant at Pueblo, Colo.

CHICAGO—Hannifin Mfg. Co., 621 South Kolmar street, manufacturer of air chucks, has awarded the general contract for a 2-story plant addition 75 x 116 feet.

CHICAGO—Link-Belt Co., 329 West Thirty-ninth street, has awarded the general contract for a 1-story plant unit 120 x 220 feet to P. M. Tilley Inc., 844 Rush street.

CICERO, ILL.—Economy Electric Mfg. Co., 1919 South Fifty-fifth Court, has been incorporated with $10,000 capital by William Martin and Joseph Legner Jr.

CORWITH, ILL.—Crane Co. has awarded the structural steel contract for plant No. 3 to American Bridge Co.

EAST ST. LOUIS, ILL.—Southern Malleable Iron Co., Twenty-first and Bond streets, has awarded the contract for a 1-story foundry addition, 85 x 250 feet, to the St. Louis Structural Steel Co.

OAK PARK, ILL.—A. L. Powell Power Co., developer of the Powell Lever-Motor, is investigating sites for a plant, including one at Detroit.

QUINCY, ILL.—Excelsior Stove & Mfg. Co., 510 South Front street, has awarded the contract for a plant and warehouse to Buerkin & Buerkin, 201 Broadway.

ROCKFORD, ILL.—Atwood Vacuum Machine Co., 2440 North Main street, has awarded the contract for a 1-story plant addition, 80 x 144 feet, to Security Building Corp., 1016 Charles street.

STERLING, ILL.—Northwestern Barb Wire Co.'s plant was damaged by a recent fire.

BAY CITY, MICH.—Valley Castings & Pattern Co. is constructing an addition to house the offices, pattern shop and brass and copper foundry. William Mueller is president.

DETROIT—O. L. Anderson Co. Inc., manufacturing sheet metal automobile parts, is planning to expand.

DETROIT—General Motors Corp., General Motors building, plans to build a 1 and 3-story assembly plant at Leeds, Mo. A. Kahn, Marquette building, Detroit, is architect.

DETROIT—Packard Motor Car Co., East Grand boulevard, is inquiring for machinery and equipment for its 1-story repair shop, 67 x 112 feet to be built at Utica, N. Y.

DETROIT—Detroit Edison Co. includes in its 1928 program completion of the Trenton channel power house, additions to the Delray power house, construction of four substations and additions to some existing ones.

DETROIT—Briggs Mfg. Co., 11631 Mack avenue, has awarded the general contract for a 5-story plant, 180 x 370 feet, for finishing and storage of automobile bodies, to be built on Warren avenue. (Noted April 12.)

MONROE, MICH.—Wilder-Strong Implement Co. has started manufacturing in temporary buildings, following a loss sustained to its plant by a recent fire. Work on rebuilding the plant will start immediately. (Noted May 24.)

MUSKEGON, MICH.—Accuralite Co., 722 Terrace street, has awarded the contract for a 1-story plant to the Austin Co., Cleveland. (Noted May 24.)

PONTIAC, MICH.—H. K. Ferguson Co., Detroit, has been awarded the contract for a garage and other buildings for the Hubbard Spring Co., Pontiac.

BELLEFONTAINE, O.—Big Four railroad, H. A. Baldwin, Big Four building, Cincinnati, engineer, plans to build repair shops here.

CLEVELAND—Eaton Axle & Spring Co., East 140th street, will establish a branch plant at Bridgeport, Conn., where it has leased a building.

CLEVELAND—Case School of Applied Science is inquiring for machine shop equipment for its proposed 4-story chemistry laboratory, 50 x 220 feet. (Noted May 17.)

CLEVELAND—Gogan Machine & Foundry Co., 1440 East Fifty-fifth street, Cleveland, is changing its name, July 1, to the Gogan Machine Co. and contemplates building a 2-story addition, 40 x 100 feet.

FINDLAY, O.—Bluffton Mfg. Co., manufacturer of washing machines and gasoline engines, is moving its machinery here from Bluffton, O., and will occupy the plant of the Adams Axle Co., purchased last wnter.

LIMA, O.—Ohio Steel Foundry Co. has awarded the contract for a 1-story foundry, 53 x 253 feet, to H. K. Ferguson Co., Hanna building, Cleveland. A 10-ton jib crane and a 10-ton bridge crane will be installed. J. E. Galvin is president of the company.

MARION, O.—Jennings Brake & Spring Co., A. J. Jennings general manager, is inquiring for a 24-inch lathe, drill press, etc.

OXFORD, O.—Board of trustees, Miami university, plans to build a laboratory building. H. B. Briggs, Ohio-Hartman building, Columbus, O., is architect.

SABINA, O.—McPherson-Huff Tool Co., W. L. Huff manager, is inquiring for a drill press, medium size, small lathe and other equipment.

TROY, O.—Advance Aircraft building has awarded the contract for structural steel for its plant to Massillon Bridge & Structural Co.

WAPAKONETA, O.—Sheets-Dunsmore Mfg. Co., C. W. Timmermeister general manager, is inquiring for automatic turning machine, buffing and polishing machine, drill press and other equipment.

WARREN, O.—U. S. Industrial Engineering Co., Cleveland, has changed its name to the Gaskill Industrial Furnace Co. and consolidated with the Trumbull Mfg. Co., Warren, O. Operations are being transferred to Warren and the capital stock doubled.

GLENDALE, W. VA.—Work on the new building which will house the plane plant of the Fokker Aircraft Corp. of America, has been nearly completed. The first unit of machinery has been delivered.

APPLETON, WIS.—Bids will be taken after June 10 for the erection of a new foundry for the Appleton Machine Co., 618 South Oneida street, maker of paper and pulp mill equipment and machinery. W. F. Dolke, Evanston, Ill., is consulting engineer.

ISHPEMING, WIS.—Pfeffer Construction Co., 402 Builders Exchange, Duluth, is low bidder at $49,200 for building an oil house and a machine shop-garage for the Marquette county highway commissioners in this city.

MADISON, WIS.—The J. H. Findorff & Son Co., local builder, has taken the general contract to erect an addition, 52 x 71 feet, to the steam power plant of the Madison Gas & Electric Co. at 100 North Fairchild street. The contract for a 15,000 kilowatt turbogenerator has been placed with the Allis-Chalmers Mfg. Co., Milwaukee.

MERRILL, WIS.—Capital stock of the Merrill Machinery & Supply Co. has been increased from $25,000 to $75,000. Additions are contemplated.

MILWAUKEE—Wesley Steel Treating Co., 651 South Pierce street, is about ready for bids for the erection of a new shop unit, 50 x 55 feet, 28 feet high. Charles I. Wesley is president.

MILWAUKEE—Ground has been broken by the Jambor Tool & Stamping Co., 1261 Thirtieth street, for a 2-story shop addition, 60 x 75 feet, and a second story on part of the present main building. H. E. Pressinger is secretary.

MILWAUKEE—Milwaukee Steel Foundry Co. has started extensive alterations to its plant. The main building, 50 x 232 feet, will be given a new steel roof and other parts thoroughly modernized.

RACINE, WIS.—A decision is expected shortly concerning the erection of a new plant for the Racine Screw Works, the original shops of which were burned Feb. 25. Contractors' bids are now under consideration.

STEVENS POINT, WIS.—The Weber Life-Like Fly Co., 106 Ellis street, maker of fishing tackle, supplies and other sporting goods, is about to award contracts for the erection of a new 2-story factory, 90 x 120 feet. O. L. Weber is president and general manager.

SUPERIOR, WIS.—A new garage and repair shop will be built here for the Nordness-Couture Motor Co., 905 Tower avenue. It will be 50 x 140 feet, partly 2-stories.

SUPERIOR, WIS—A new machine shop will be erected at the local docks of the Berwind Fuel Co., Duluth. The engineer is Roland C. Buck, Superior.

SUPERIOR, WIS.—Great Lakes Coal & Dock Co., Minneapolis, is about ready for bids for the construction and equipment of a new screening plant. W. C. Nelson is president.

SUPERIOR, WIS.—Architect Roland C.

Buck is preparing plans for an addition to the Central High school to provide additional vocational training area. L. A. Nichols is secretary of the board of education.

WEST BEND, WIS.—West Bend Products Co. is taking bids until June 4 for a new 1-story manufacturing building, 30 x 85 feet, and a 2-story addition, 30 x 33 feet. W. F. Dolke, Evanston, Ill., is consulting engineer for the project.

West Central

MINNEAPOLIS—Dominion Electric Co., 116 First avenue north, plans to build two units for the manufacture of electrical equipment.

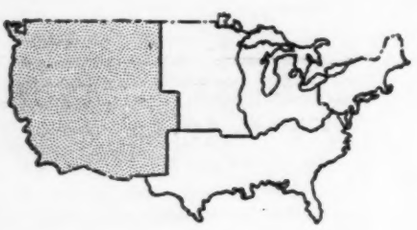
JOPLIN, MO.—Empire District Electric Co., 414 Joplin street, plans to build a hydroelectric plant on White River.

ST. LOUIS—MacGregor Valve Co. has been incorporated by Guy M. Harcourt and Halbert P. MacGregor, 4502 Forest Park boulevard.

ST. LOUIS—Stiles-Herman Mfg. Co. has been incorporated to manufacture tool appliances for machinery etc., by Herman Johnson, 3719 Mermec street.

ST. LOUIS—Frank C. Stolle Mfg. Co. has been incorporated to manufacture road spreader devices by Frank C. Stolle, 529 South Rockhill road.

ST. LOUIS—Joseph Greenspon's Sons Iron & Steel Co., 3130 Hall street, will remodel the plant of the Sharon Pressed Steel Co., Sharon, Pa., for the past four years idle. It will be a branch works for the manufacture of oil and gas well pipe.



Western States

EMERYVILLE, CALIF. — Magnavox Co., manufacturer of radio equipment, has awarded the contract for a 1-story plant addition to H. J. Christiansen, Syndicate building, Oakland, Calif.

SAN FRANCISCO—W. R. Ames Co., 450 Irwin street, has awarded the general contract for a 1-story sheet metal shop.

DENVER—Rocky Mountain Equipment Co. has been organized with Richard E. Schmuck, president; George Young, vice president, and George W. Grover, secretary-treasurer, to buy, sell and rebuild second hand machinery. Offices and yards are being opened at 1117 Wazee street.

PORTLAND, OREG.—Portland Bolt Co., Fourteenth street, plans to build a 2-story plant addition, 80 x 85 feet.

Southern States

FAYETTEVILLE, ARK.—University of Arkansas, college of engineering, W. N. Gladson dean, plans to rebuild its shops which were burned May 4. One building will be about 32 x 200 feet to house the machine shop and pattern shop and the other will be 32 x 160 feet, to house the blacksmith shop and foundry. Upon completion of the buildings, the engineering department will be in the market for full shop equipment, including machine tools, etc.

JACKSONVILLE, FLA.—Bell Mfg. Co. Inc., R. J. Bell president, plans to build a new steel barrel plant.

ST. PETERSBURG, FLA.—United States Hammered Piston Ring Co., 611 First avenue, plans to build a new 1-story plant.

NEW ORLEANS—Clarke Garage Co. will erect 4-story concrete and steel garage building, 88 x 120 feet, at 213 South Rampart, to include modern repair shop.

NEW ORLEANS—Fulton Iron Works Co. has received contract for installation of complete mill and boiler equipment in the Southdown sugar mill near Houma, La., operated by Pipes & Krumbhaar. Steam engine power equipment will be used.

SHREVEPORT, LA.—Oil City Iron Works Whitehall street, will move into a new building on a lot adjoining its present property. The shop and No. 2 warehouse of the company was burned in a recent fire. All machinery damaged in the fire has been replaced. (Noted May 24.)

LOUISVILLE, KY.—Shuler Axle Co. Inc., Jones and N streets, has awarded the general has completed additions to its machine shop and foundry increasing total floor space to 40,000 square feet.

SHREVEPORT, LA.—Negotiations are under way with the chamber of commerce to establish an assembly plant and possibly branch plant for the manufacture of farm machinery.

HATTIESBURG, MISS.—A. K. McInnis has let the contract for a garage building at Pine and Hardy streets, to include a repair shop.

OKLAHOMA CITY, OKLA.—Southwestern Light & Power Co. will rebuild generating plants at Elk City and Temple, Okla. (Noted May 3.)

OKLAHOMA CITY, OKLA.—Oklahoma railroad plans general improvements including new repair shop. Hubert Hudson is president of the company.

OKLAHOMA CITY, OKLA.—Hickman Smith Co., 12 West Sixth street, has awarded the contract for a 3-story plant, 75 x 140 feet, to C. M. Dunning, 420 North Hudson street.

SARATOGA, OKLA.—Arkansas Portland Cement Co. is beginning construction of a new cement plant near here.

TULSA, OKLA.—Alloy Steel Products Co., has been incorporated with $3000 capital by George M. Belser, 1236 South Quaker street; E. E. Robbins and A. F. Campbell.

TULSA, OKLA.—Big Four Foundry Co. plans improvements at its plant, 301 North Hartford street, including additions to pattern shop and molding room. Clarence Jeffries is plant superintendent. (Noted April 5.)

TULSA, OKLA.—Jones Mfg. Co., formerly manufacturer of oil field tools, has started the manufacture of wood and steel playground apparatus at its plant, 1702 East Sixth street. A. S. Jones is president.

BEAUMONT, TEX.—City plans enlargement of airport and has let contract to Orange Car & Steel Co. for new steel hangars for 23-acre addition to landing field.

BROWNSVILLE, TEX.—City will build an electric substation at Tenth and Adams streets.

FORT WORTH, TEX. — Texas-Louisiana Power Co., of this city, through A. Bickel of the Bickel Co. Inc., Kansas City, Mo., has submitted a proposition to directors of irrigation districts in the upper Rio Grande valley for construction of a hydroelectric power plant at Elephant Butte, N. Mex. The El Paso Electric Co., El Paso, Tex., a subsidiary of the Stone & Webster interests of Boston, also has submitted a similar proposal.

Canada

BRANTFORD, ONT.—Brant Motor Co. Ltd. has been incorporated to manufacture and deal in motor cars, tractors, automobiles, trucks, etc., with $40,000 capital by Arthur G. S. Wartman, Henry B. Gardner, and Frederick H. Roberts.

OSHAWA, ONT.—Fire in the store room and

engine room of the Ontario Malleable Iron Works on May 16 caused damage.

OSHAWA, ONT.—E. Smith, 377 Simcoe street south, has been awarded contract for $35,000 plant addition on First avenue for the W. E. Phillips Co., Prospect street, manufacturer of mirrors, moldings, etc. Building to be 3-story, 44 x 105 feet, steel and brick construction. Architect, G. Roper Gouinlock, 371 Bay street, Toronto, Ont.

OTTAWA, ONT.—Monarch Airways Ltd. has been incorporated to manufacture and deal in airplanes, hydro-planes, sea planes, airships, etc., with $100,000 capital by Duncan R. Kennedy, John B. Mulvey, and Walter J. Gilhooly.

PETERBOROUGH, ONT.—J. J. Ashworth, general manager of the Canadian General Electric Co., announced that the company has decided to build an addition to its plant here. The company also plans further additions which, however, will not be carried out until 1929 and 1930.

PICTON, ONT.—The public utilities commission has appointed H. G. Hunter, engineer, 598 Union street, Montreal, Que., to prepare plans for waterworks plant.

TORONTO, ONT.—Lake Superior Corp. has awarded the contract for a benzol plant to the Wilputte Coke Oven Corp., New York. The plant is a part of the Lake Superior Corp.'s expansion program.

WINDSOR, ONT.—Canadian Engineering & Tool Ltd., Church street, will build addition to its plant here. Building to be 1-story, 45 x 165 feet, concrete and brick construction.

CAP DE LA MADELEINE, QUE.—Bates Valve Bag Co. Ltd., manufacturer of automatic bag filling and weighing machines, etc., is having plans prepared for a plant. Building to be 1½ story, 40 x 200 feet, steel and brick construction.

MONTREAL, QUE.—Wright Flexible Axle Motors Ltd. has purchased the land and buildings of the Canada Carriage & Body Co., to carry on the manufacture of its own car.

MONTREAL, QUE.—F. Robb, 1111 Beaver Hall Hill, has prepared plans for a plant on Smith street for Henderson, Barwick Co., Ltd., 5 Olier street, manufacturers of elevator buckets, coal ducts, etc. Building to be 2-story, 80 x 188 feet, steel and brick construction.

MONTREAL ,QUE.—E. G. M. Cape Co., 10 Cathcart street, has been awarded contract for a plant for Simmons Ltd., 400 St. Ambrose street, manufacturer of metal beds, etc. Architect, Ross & MacDonald, 1 Belmont street, Montreal.

MONTREAL, QUE.—Anglo Galvanizing Co. of Canada Ltd. has been incorporated to manufacture and deal in all kinds of metal goods, with $50,000 capital by Alexandre C. Casgrain, Errol M. McDougall, James R. Boyd and others.

MONTREAL, QUE.—Anglin-Norcross Ltd., Montreal, Que., have contract for building locomotive and machine shops at Point St. Charles, for the Canadian National railroad, T. T. Irving, regional engineer, New Union station, Toronto, Ont.

MONTREAL, ONT.—Reserve Power Ltd. has been incorporated to carry on the business of an electric light, heat and power and waterworks company with $10,000 capital by Francis G. Bush, Herbert W. Jackson and William P. Creagh.

MONTREAL, QUE.—Canadian Taverner Co. Ltd. has been incorporated to carry on the business of electrician, contractor, and manufacturer and dealer in radio, mechanical, plumbing and heating apparatus, with $50,000 capital by Chilion G. Heward, Rufus C. Holden and Charles T. Ballantyne.

MONTREAL, QUE.—Silex Motor Pick Ltd. has been incorporated to manufacture and deal in iron, steel and other metals, from the ore to the finished products, with $100,000 capital and 40,000 shares no par value stock by George F. Sheppard, Charles E. Gallagher and Armand Archambault.

ST. HYACINTHE, QUE.—Otto Higel Co. Ltd., 680 King street west, Toronto, Ont., manufacturer of piano actions, musical instruments, etc., is having sketch plans prepared by G. M. Niller & Co., 71 Mutual street, Toronto, Ont., for the erection of a plant here.

ASSINIBOIA, SASK.—Dominion Electric Co. is completing arrangements to take over the local power plant, and when the deal has been completed the company plans to build a power plant to develop 900 horsepower.

CRAIK, SASK.—Dominion Electric Co., Watrous, Sask., proposes to build power plant here.

ESTEVAN, SASK.—Dominion Electric Co. Watrous, Sask., plans to build addition to its power plant here.

NAKOMIS, SASK.—Mid-West Utilities, Calgary, Alta., plans to build a power plant here.

SASKATOON, SASK.—Plans are being completed and bids will be called immediately by Hutton & Souter, architects, 6 James street south, Hamilton, Ont., for the erection of a distributing and assembly plant here for General Motors of Canada Ltd., Oshawa, Ont. Building to be 1 story 80 x 300 feet.

Machinery Trade Better in Austria

Conditions in general are more favorable in the Austrian machinery industry than in recent years and a further increase of activities is anticipated, says Consul John F. Hurley, Vienna, in a report of the department of commerce. These favorable developments are chiefly accounted for by a gradually increasing demand of various local industries, which have been decidedly reserved during recent years in improving and renewing their equipment. The industry is reported to have received more orders at the Vienna spring fair than at recent fairs.

Steam engine plants are well occupied, chiefly in manufacturing certain types of stationary steam engines new to this market, and in producing up-to-date stationary steam engines for power plants, with a comparatively small steam consumption. A slight increase in demand is also reported with regard to smelting plant and rolling mill machinery, a trend which may be explained by increased activity of the iron and steel industry during the last twelve months. Demand for mining machinery continues to be weak, comparatively small investments being made by domestic and surrounding foreign mine owners. Machinery is a comparatively important export of Austria, contributing more than $5,000,000 towards the reduction of the country's large trade deficit.

New Trade Publications

RECORDING GAGES—Bristol Co., Waterbury, Conn., has issued a 32-page bulletin, profusely illustrated, explaining the operation and advantages of its recording liquid level gages.

BRIDGES AND BUILDINGS—Foundation Co., New York, in two bulletins titled "Buildings" and "Bridges and Bridge Piers" presents photographs of typical projects it has constructed and sketches of early efforts at construction.

COMBUSTION CONTROL—Hagan Corp., Pittsburgh, in two bulletins, features balanced float controllers and valves and governors for special control. Both are illustrated and fully described.

WELDERS—Fusion Welding Corp., Chicago, presents a bulletin introducing its new single control welder. An illustration portrays the machines, with a brief explanation.

CHUCKS—Westcott Chuck Co., Oneida, N. Y., has just issued its catalog No. 528 giving illustrations and complete data concerning its line of combination lathe, independent lathe, spur-geared universal, two-jawed lathe and drill chucks.

SHEET METAL ELBOWS AND SHOES—Ferdinand Dieckman Co., Cincinnati, has issued catalog No. 26 presenting with illustrations and text the various types of conductors, elbows, shoes, angles, etc., that the company manufactures. Tables list sizes, price discounts, etc.

HANDPOWER CRANE—Whiting Corp., Harvey, Ill., has issued a bulletin on its handpower cranes, designed for use where a power crane is not needed, small loads being handled. Illustrations and description cover details of the device. Tables of data cover details.

PROJECTED WINDOWS—Bogert & Carlough Co., Paterson, N. J., illustrates in color the bronze ventilator guide feature of its projected steel windows, in a catalog just issued. Specifications, detail drawings and complete data for the architect, engineer and specification writer are given.

ELECTRICAL DEVICES—General Electric Co., Schenectady, N. Y., has issued bulletins on a number of items of equipment, as follows: Enclosed magnetic switches, drum-type controllers, gas engine-driven arc welder, temperature overload relay panel, low-speed synchronous generator, constant-potential arc welder, centrifugal air compressor, multi-speed induction motor, arc welder, mechanical drive turbine, remote-indicating speed controller, fan-cooled induction motor, arc welding equipment, and speed-regulating rheostats.

Discounts and Extras

Steel Pipe

Pittsburgh and Lorain basing discounts, jobber's carloads.

Evanston, Ill., and Indiana Harbor, Ind., take differential 2 points less discount.

Chicago takes differential 2½ points less than Pittsburgh-Lorain basis.

Butt Weld

	Black	Galvanized
⅛-inch	45	19½
¼ and ⅜-inch	51	25½
½-inch	56	42½
¾-inch	60	48½
1 to 3-inch	62	50½

Lap Weld

2-inch	55	43½
2½ to 6-inch	59	47½
7 to 8-inch	56	43½
9 and 10-inch	54	41½
11 and 12-inch	53	40½

REAMED AND DRIFTED

Butt Weld

1 to 3-inch	60	48½

Lap Weld

2-inch	53	41½
2½ to 6-inch	57	45½

EXTRA STRONG—PLAIN ENDS

Butt Weld

⅛-inch	41	24½
¼ and ⅜-inch	47	30½
½-inch	53	42½
¾-inch	58	47½
1 to 1½-inch	60	49½
2 to 3-inch	61	50½

Lap Weld

2-inch	53	42½
2½ to 4-inch	57	46½
4½ to 6-inch	56	45½
7 to 8-inch	52	39½
9 and 10-inch	45	32½
11 and 12-inch	44	31½

DOUBLE EXTRA STRONG

Butt Weld

½-inch	42	32½
¾ to 1½-inch	45	35½
2 to 2½-inch	47	37½

Lap Weld

2-inch	41	32½
2½ to 4-inch	43	34½
4½ to 6-inch	42	33½
7 to 8-inch	38	25½

(Note—Large jobbers obtain additional preferential discounts of 1 and 5 on black and 1½ and 5 on galvanized. Extra 5 per cent granted in the 4th quarter 1927 and 1st quarter 1928 discontinued April 2, 1928.)

Wrought Iron Pipe

Pittsburgh basing discounts, jobbers' carloads. Individual quotations made on delivered basis.

THREADS AND COUPLINGS

Butt Weld

¼ and ⅜-inch	+11	+39
½-inch	22	2
¾-inch	28	11
1 to 1½-inch	30	13

Lap Weld

1¼ and 1½-inch	Upon application	
2-inch	23	7
2½ to 3-inch	26	11
3 to 6-inch	28	13
7 to 12-inch	26	11

PLUGGED AND REAMED

Two points less than above

EXTRA STRONG, PLAIN ENDS

¼ and ⅜-inch	+19	+54
½-inch	21	7
¾-inch	28	12
1 to 1½-inch	30	14

Lap Weld

2-inch	23	9
2½ to 4-inch	29	15
4½ to 6-inch	28	14
7 to 8-inch	21	7
9 to 12-inch	16	2

DOUBLE EXTRA STRONG

Butt Weld

½-inch	+47½	+59½
¾-inch	+28	+40
1-inch	+34	+46
1¼-inch	+28	+40
1½-inch	+27	+39

Lap Weld

2 and 2½-inch	+13	+25
3 and 4-inch	+ 8	+17
4½ to 6-inch	+ 9	+18
8-inch	+12	.....

(Note—Large jobbers obtain additional preferential discounts of 1, 5 and 2½ on black and galvanized.)

Boiler Tubes

Pittsburgh carload discounts. Less carloads 4 points less

STEEL (Lap Weld)

2 and 2¼-inch	27 off
2½ and 2¾-inch	37 off
3-inch	40 off
3¼ to 3¾-inch	42½ off
4 to 13-inch	46 off

(Note—Additional discounts of 5 to 7 extra 5 per cents now being given.)

CHARCOAL IRON

1½-inch	+18
1¾-inch	+ 8
2 and 2¼-inch	2 off
2½ to 3-inch	7 off
3¼ to 4½-inch	9 off

(Note—Additional discounts of one 10 to two 10's and one 5 now being given.)

SEAMLESS COLD DRAWN

1-inch	56 off
1¼ and 1½-inch	48 off
1¾-inch	32 off
2 and 2¼-inch	27 off
2½ and 2¾-inch	35 off
3-inch	41 off
3¼ and 3½-inch	43 off
4-inch	46 off
4½, 5 and 6-inch	41 off

SEAMLESS HOT ROLLED

2 and 2½-inch	30 off
2½ and 2¾-inch	38 off
3-inch	44 off
3¼ and 3½-inch	46 off
4-inch	49 off
4½, 5 and 6-inch	44 off

(Note—Additional discounts of 2 or 3 extra 5 per cents now being given.)

SEAMLESS STEEL MERCHANT BOILER TUBES

Extras:

Add $8 per ton for more than four gages heavier than standard and add 10 per cent to theoretical weight.

Add 5 per cent for lengths over 24 feet and not over 26 feet.

Smaller tubes than 1-inch and lighter than standard gage to be sold at mechanical tubing list and discount.

Intermediate sizes and gages not listed above take price of next larger outside diameter and heavier gage.

SEAMLESS STEEL MECHANICAL TUBING

Base Discounts on New List July 1, 1925

Carbon 0.10 to 0.30 per cent.....50 to 55 off
Carbon 0.30 to 0.40 per cent.....45 to 50 off

SEAMLESS STEEL LOCOMOTIVE AND SUPERHEATER TUBES

Net prices per foot f.o.b. Pittsburgh

Outside diameter	Gage	Price
2-inch	12-gage	14¼c
2-inch	11-gage	15c
2-inch	10-gage	16c
2¼-inch	12-gage	16c
2¼-inch	11-gage	17c
2¼-inch	10-gage	18c
3-inch	7-gage	33c
5⅜-inch	9-gage	50c
5½-inch	9-gage	52c

Plus usual extras for forming and for long lengths over 18 feet and for commercially exact lengths.

Plate Extras

BASE

Rectangular plates, tank steel or conforming to manufacturers' Standard Specifications for structural steel, dated Nov. 24, 1922, or equivalent, ¼-inch thick and over on thinnest edge, (except for ¼-inch or 72 inches wide when ordered to weight in pounds per square foot—see width and gage extras), 100 inches wide and under, down to but not including 6 inches wide, 5 feet 0 inches long up to published limit in length but not over 80 feet 0 inch, are base. Extras per pound for width or diameter.

All Plates Rectangular or Otherwise

¼-inch thick and heavier, but not less than 11 pounds per square foot, if ordered to weigh—

Over 100 inches to and including 110 inches	.05c
Over 110 inches to and including 115 inches	.10c
Over 115 inches to and including 120 inches	.15c
Over 120 inches to and including 125 inches	.25c
Over 125 inches to and including 128 inches	.50c
Plates less than ¼-inch or lighter than 11 pounds per square foot.	
Over 72 inches to and including 84 inches	.10c
Over 84 inches to and including 96 inches	.20c
Over 96 inches to and including 100 inches	.30c

Over 100 inches add .35c to width extras for plates ¼-inch thick and heavier.

GAGE

Plates Not Exceeding 72 Inches Wide

Plates less than ¼-inch gage, to and including 3/16-inch; or lighter than 10.2 pounds per square foot, to and including 7.65 pounds per square foot	.20c

Plates Over 72 Inches Wide

Plates less than ¼-inch gage, to and including 3/16-inch; or lighter than 11 pounds per square foot, to but not including 7.65 pounds per square foot	.20c
Plates ordered 7.65 pounds per square foot	.30c

QUALITIES

Pressing steel	.10c
Flange steel (boiler grade)	.15c
Ordinary firebox steel	.20c
Stillbottom steel	.30c
Locomotive firebox steel	.50c
Marine steel	1.50c
Hull materials subject to U. S. Navy Dept. specifications for medium or soft steel	.10c
High tensile hull steel subject to U. S. Navy Dept. or equivalent specifications	1.00c
Boiler steel subject to U. S. Navy Dept. specifications, classes A and B	1.50c

Hull plates to hull specifications, required to stand cold flanging, take extra for flange steel.

Floor Plates

Checkered plates 1.75c

Checkered plates are not furnished to sketch and are rolled from "Stock Steel" only. No physical tests will be made on checkered plates.

INSPECTION

Mill inspection .....No extra

Charges for other inspection, such as Lloyd's or American bureau of shipping, will be made by inspection bureau direct to buyer.

CUTTING

LENGTH OR DIAMETER

All Plates, Rectangular or Otherwise

Five feet and over up to published limit of length, but not over 80 feet	No extra
Under 5 feet to 3 feet inclusive	.10c
Under 3 feet to 2 feet inclusive	.25c
Under 2 feet to 1 foot inclusive	.50c
Under 1 foot	1.55c
Over 80 feet to 100 feet inclusive	.10c

Over 100 feet add .25c plus .05c for every additional 2 feet or fraction thereof.

Regular Sketches

With not more than four straight cuts. (Including straight taper plates)

Additional extra ..... .10c

Irregular Sketches

With not more than four straight cuts. (Sketches cannot be sheared with re-entrant angles)

Additional extra ..... .20c